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AMERICAN BEE JOURNAL

JANUARY 1915

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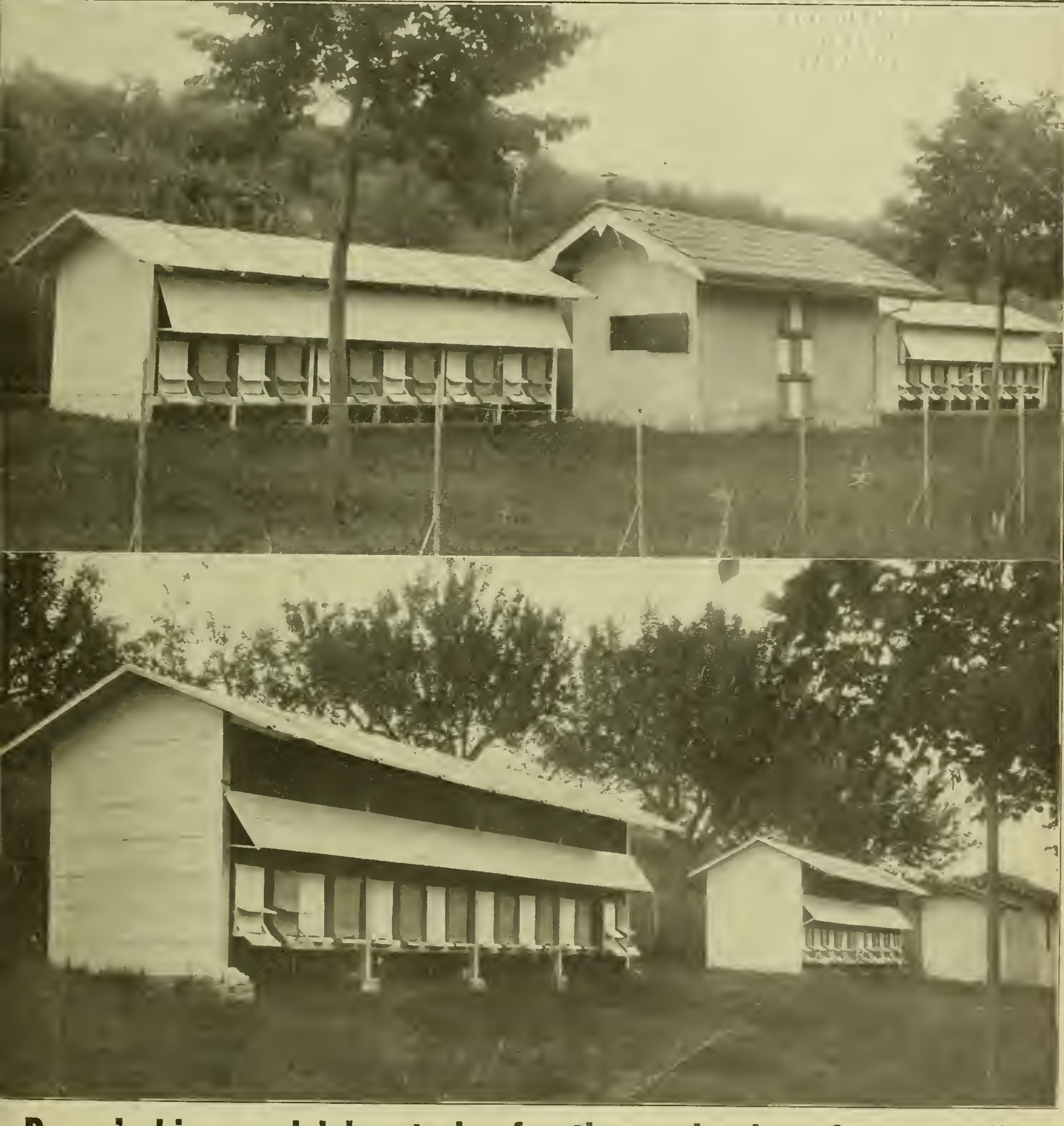

Penna's hives and laboratories for the production of queen-cells

(See "Notes from Abroad")

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

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Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n
ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

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C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

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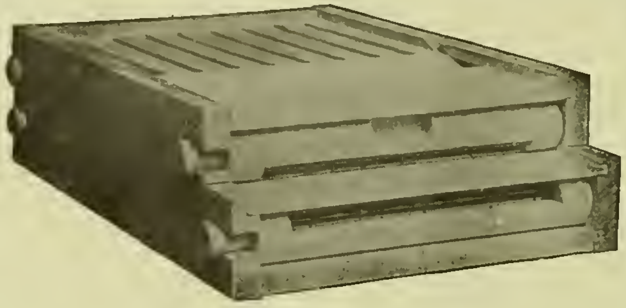

WHY WORRY IN THE WINTER TIME ABOUT YOUR BEES BEING MUSTY IN THE SPRING, THIS BOTTOM-BOARD keeps bees and combs clean and healthy. Dead bees drop away from frames. If by chance they become short on stores during the spring months, "open the rear or front," and hand them a supply. It is done easy with this Bottom Board. Made in 8 and 10 frame size. $2.50 per. Nothing but pure Italian stock in outyard of 100 colonies.

Breeders $10 to $25. Guarantee Satisfaction.

CHAS. G. SCHAMU
INVENTOR AND MANUFACTURER
Box 48 - Liverpool, New York

CLOSING OUT SALE
—OF—
BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
"Pearce's Method of Beekeeping" (50c)	.30
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.30
Muth Bee-Veil (75c)	.60
Danzenbaker Bee-Smoker ($1.00)	.80
	$3.60

Or *all* the above in one order to one address *for only $3.00.* (The retail price of the bunch is $4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

SUPPLY YOUR HONEY CUSTOMERS
WITH
Fine White Alfalfa
CAN SUPPLY ANY QUANTITY
Extracted honey packed in 60, 10, 5, and 2½ lb. cans
Send for sample and prices today
DADANT & SONS, Hamilton, Ill.

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Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

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Everything for the beekeeper. Address.

J. C. Frohliger, Berkeley, Calif.

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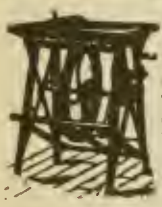
BARNES' Foot-Power Machinery



Read what J. I. Parent, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in. cap, 100 honey racks, 500 brood-frames, 2,000 honey-boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

Try My Famous Queens

From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan

Bred in Separate Yards

Untested, one, 75c; 6, $4.25; 12, $7.50; 25 14.25; 100, $50. Tested, one, $1.50; six, $8.00; 12, $15. Breeders of either strain, $5. Nuclei with untested queen, one-frame, $2.50; six one-frame, $15; two-frame $3.50; six two-frame $20.40; nuclei with tested queen, one-frame, $3.00; six one-frame, $17.40; two-frame, $4; six two frame $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

A TRIAL PACKET of This Grand TOMATO FREE!

Rowe's GRAND RAPIDS MARKET TOMATO was originated by Mr. George E. Rowe, the Editor of THE FRUIT BELT, America's Greatest Fruit Magazine. This tomato is the very earliest of the heavy cropping varieties, it yields abundantly, a Grand Shipper, and is the Most Delicious Tasting tomato ever put upon the market. In Size, the individual fruits will average a half-pound each, and are very uniform in shape, size, and color. There are few seeds, as the tomato is solid, and cuts like a piece of beef-steak. One grower near Grand Rapids, Mich., sold OVER TWO THOUSAND DOLLARS worth of these tomatoes off of two thousand vines. We are willing to stake our reputation on this tomato. The seed cannot be procured from Seedsmen, as we own the entire stock. We are GIVING IT AWAY to introduce THE FRUIT BELT, and you can get a packet, if you act now.

The Fruit Belt America's Greatest Horticultural Journal

Shows you How to Make Money Raising Fruit: How to Prune and Thin Properly: How to Control Insects and Plant Diseases by Spraying: What Varieties to Plant: How to Set out New Orchards: How to "Rejuvenate" Old Orchards. THE FRUIT BELT is a Big Illustrated Magazine, Filled with Good Things for You.

TRIAL OFFER *We will send THE FRUIT BELT to your address for the remainder of this year, upon receipt of Thirty Cents, and we will send to you, by return mail FREE, a trial packet of Rowe's Grand Rapids Market Tomato seed. Don't delay, the stock is limited. Address - -*

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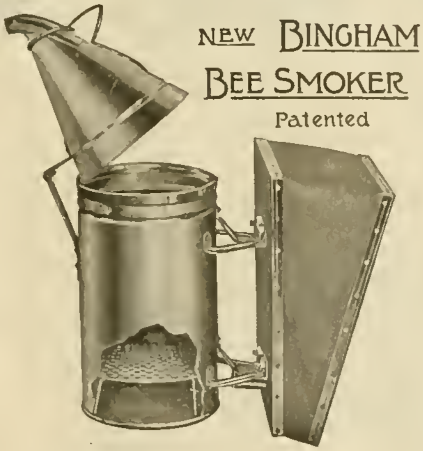
GRAND RAPIDS, MICHIGAN

CASH PAID FOR HONEY

We are constantly in receipt of inquiries for prices on honey. When you are ready to market your honey, you will find an army of purchasers ready to buy it by advertising your product in the Woman's National Weekly, which reaches 200,000 homes every week. Write for our Special Classified rate and free sample copy. **Dept. O C, Woman's National Weekly, University City, St Louis.**

Bingham Bee Smoker



Nearly Forty Years On the Market

The original bee smoker was invented and patented by Mr. T. F. Bingham in 1878, 1882, 1892 and 1903. The Bingham Smoker is up to date, and the standard in this and many foreign countries. It has recently been improved, and is the all-important tool of the most extensive honey producers of the world. No other invention in apiculture has been so important, as little could be accomplished without the bee smoker. For sale direct or at your dealers. Postage extra.

Smoke Engine	4	inch stove, Weight	1¾	pounds,	$1.25
Doctor	3½	" " "	1⅝	"	.85
Conqueror	3	" " "	1½	"	.75
Little Wonder	2½	" " "	1	"	.50

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A. G. WOODMAN COMPANY

Grand Rapids, Michigan

INCREASE THE YIELD OF YOUR FARM

The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre. We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

Everybody knows that by following the Campbell System of Soil Culture, crop yields have been doubled in every State of the Union from New York to California. Why not learn what the principles of the Campbell System are and adopt them? You can get all this and a thorough agricultural education without leaving home by taking a course in the

Campbell Correspondence School of Soil Culture

You can have your choice of eight courses, Soil Tillage, Soil Improvement, Small Farming, Horticulture, Irrigation, Dry Farming, Farm Engineering and Animal Husbandry, all for a nominal tuition fee, no board to pay, no books to buy, everything furnished, and you can use your spare time while still running your farm or holding your job.

We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad. but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

Campbell Scientific Soil Culture Company Lincoln, Nebraska

The Beekeepers' Review Clubbing List for 1915

In the following combinations we offer periodicals of sterling worth. Remember, you are not receiving some premium of questionable value, but a saving of dollars and cents on your 1915 reading matter. The combination offers with the reduction we are able to allow are as follows:

The Review	$1.00	All five
Woman's World	.50	$1.25
Household Magazine	.50	the bargain
People's Popular Monthly	.50	of the
Farm Life	.50	season
Total value	$3.00	

Here is another good one:

The Review	$1.00	Both for
The Youth's Companion	2.00	only $2.25

The following are of sterling cash value:

The Review	$1.00	Both for
American Bee Journal	1.00	only $1.50

Save $1.30 on this combination.

The Review	$1.00	$4.00 worth
Everybody's Magazine	1.50	for only
The Delineator	1.50	$2.70

Another is:

The Review	$1.00	Both for
Reliable Poultry Journal	50	$1.25

The Review	$1.00	Both for
Gleanings in Bee Culture	1.00	only $1.50

The Review	$1.00	$3.00 each
Gleanings in Bee Culture	1.00	value for
American Bee Journal	1.00	only $2.00

Special offer to new subscribers: To those ordering early before the supply is exhausted, we will send in connection with any of the above combinations, the last eight months of the Review for 1914, which contains the National convention report with many valuable papers read at said convention, besides other articles of value not appearing in other papers. Address, with remittance,

THE BEEKEEPERS' REVIEW, Northstar, Mich.

3 Percent January Discount on

"Falcon" Bee Supplies

How much percent interest do you get in the bank—wouldn't it pay to invest in bee supplies now and save the 4 percent—you'll have your money tied up only a few months?

"**Falcon**" foundation and supplies have the quality, and with the superior workmanship back of them make them perfect.

If you have never used "**Falcon**" supplies, send a list of your 1915 requirements and let us quote. Some of the old veteran beekeepers who purchased "**Falcon**" hives when we first started manufacturing supplies about 40 years ago, tell us than the hives are in good shape yet. In some cases they tell us the hives have not been painted for about 25 years, which goes to show that "**Falcon**" supplies have the QUALITY.

Remember we are the manufacturers of that sweet pure "**Falcon**" foundation. We have OUR OWN plant and OUR OWN process for making foundation. Samples will be gladly sent for your inspection.

Red Catalog postpaid **"Simplified Beekeeping," postpaid**

Dealers Everywhere

W. T. FALCONER MFG. CO., - FALCONER, N. Y.

Where the good bee hives come from

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

Beekeepers' Supplies

Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

J. NEBEL & SON SUPPLY CO.,
High Hill, Montg. Co., Mo.

PONTIAC ENGRAVING CO
ARTISTS
ENGRAVERS-ELECTROTYPERS
542 550 S. DEARBORN ST.
PONTIAC BLDG: CHICAGO.

1865 **1915**

LOOKING BACKWARD!!

HALF A CENTURY OF ACHIEVEMENT!

"Great oaks from little acorns grow." It was indeed a tiny acorn from which this great oak, the largest factory of Beekeepers' supplies in the world, has grown—a stray swarm of bees, which, in the year 1865, happened to pass over the workshop of A. I. Root. Little did he dream then that the hiving of this absconding swarm of bees would give rise to all this activity, and that, in years to come, there would arise a mighty factory in Medina, Ohio, covering over 6 acres of ground and employing 300 men, devoted entirely to the manufacture of Beekeepers' supplies, with Branches, Agents and distributing houses in every large city in the United States and in every civilized country of the world.

It is a far cry from the little workshop in which A. I. Root began to make hives with the aid of a windmill (sitting up nights in order to make use of the precious power whenever the wind should happen to set the mill a-going) to the modern up-to-date plant with its many departments and numerous scientific machinery and appliances, which now has taken its place.

The history of Beekeeping does not record any such phenomenal growth as that experienced by Beekeepers in the United States during the last 50 years, which, of course, made it incumbent on the manufacturers of supplies to keep up with the procession, and it has ever been our aim and ambition, not only to keep up with the procession, but rather to keep ahead of it, leading rather than being led. Thus it is that we have spared no expense to be able to give our customers the benefit of all new inventions and improvements, trying out everything that is submitted to us, following out the suggestions of our many loyal employees as well as of clients and others, giving everything a fair and exhaustive trial, frequently at a considerable cost, only to be, more often, discarded as impractical.

As we look back over the last 50 years and the first half century of our existence, we sometimes wonder how we have been able to meet and solve the many vexing problems that confronted us at every turn, but somehow they have been met, until today "ROOT'S GOODS" are known the world over, and are synonymous with perfect workmanship, the best of raw materials, and the latest up-to-date appliances and machinery.

Truly it has been half a century of achievement, and if the next 50 years, as has been prophesied, will see a still greater extension and development in Beekeeping in this and other countries, we trust that at the end of the century of our existence we may still be in the lead, and in a position to serve our many friends, here and abroad, even better than we have been able to do during the last 50 years.

We extend a fraternal greeting to all Beekeepers on this, our fiftieth anniversary, thanking them for their patronage, and asking their indulgence for any shortcomings of which we may have been guilty in the past, and which, with their kind assistance, we hope to be able to remedy in the future.

THE A. I. ROOT COMPANY, MEDINA, OHIO

Our Special Big Four Magazine Offer!

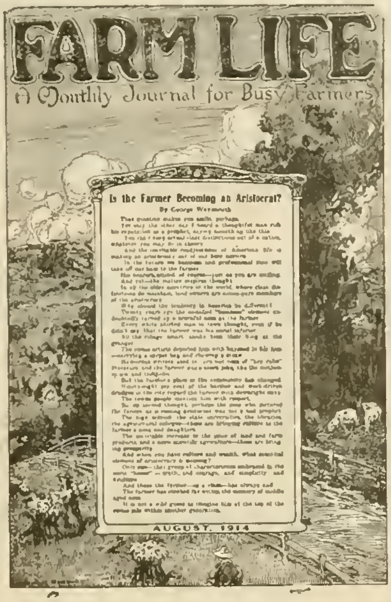
Woman's World—Household—People's Popular Monthly—Farm Life

A special arrangement secured by the American Bee Journal, enables us to offer to our subscribers for a limited time only the American Bee Journal for one year with a full year's subscription to all four of the above high-grade publications, at the special price of **$1.30.**

Four Big Magazines and American Bee Journal All Five for $1.30

WOMAN'S WORLD

WOMAN'S WORLD has more subscribers than any other magazine published, over two million a month. Its articles, its stories, its illustrations, are the best that money can buy. It is a magazine to be compared with any home magazine in the country, regardless of price, without fear of contradiction of any claims we make for it. Its stories are by authors known the world over.


FARM LIFE
A Monthly Journal for Busy Farmers
Is the Farmer Becoming an Aristocrat?
AUGUST, 1914

FARM LIFE is a publication adapted to the everyday life of the farm folks, brimfull of things that help to make the farm life more cheerful and homelike. Special articles by authorities on all subjects of interest to the up-to-date farmer.

THE PEOPLE'S POPULAR MONTHLY

PEOPLE'S POPULAR MONTHLY is one of the greatest popular fiction and home magazines published. Contains complete stories each issue.

The HOUSEHOLD

THE HOUSEHOLD—A favorite magazine in a million homes. Every issue has many interesting features.

This offer supplies you with a Magazine of the best quality, giving you a year's supply of good literature at a saving of one-half cost

This is the **best** and biggest combination clubbing offer ever presented to the public. The pubisher of the American Bee Journal is glad to announce to his subscribers the completion of this splendid arrangement, whereby he can offer such an excellent list of publications in connection with a year's subscription to the American Bee Journal at the remarkable price of $1.30 for all five. This offer is good for a **short** time only, and may be increased at any time.

AMERICAN BEE JOURNAL, Hamilton, Illinois

New Jersey Meeting

The annual meeting of the New Jersey State Beekeepers' Association will be held at the Entomology Building in New Brunswick, Jan. 13 and 14, 1915.

PROGRAM.

WEDNESDAY, JAN. 13—10:30 A.M.

Reading of the minutes and report of the secretary-treasurer.

"Double Walled Hives *vs.* Single Walled Hives and Winter Cases"—C. H. Root, Red Bank.

Round Table discussion.

2:00 P.M.—"Spring Feeding"—G. F. Neipp, Chatham.

"Blocking Up to Prevent Swarming"—Harold Hornor, Mt. Holly.

"Increasing the Membership"—C. D. Cheney, Hoboken.

7:30 P.M.—"The Need of Additional Legislation"—Dr. Headlee, New Brunswick.

"Retailing the Crop"—H. T. Kille, Swedesboro.

THURSDAY, JAN. 14—9:30 A.M.

"Raising Honey for a Livelihood"—C. H. Root, Red Bank.

"Lessons from the Hartford Honey Show"—E. G. Carr, New Egypt.

"Swamp Beekeeping"—S. Powers, Wading River.

2:00 P.M.—Election of officers, election of delegate to National convention, and election of delegate to State Board of Agriculture.

"Reminiscences"—W. W. Case, Frenchtown.

The following officers were elected for the ensuing year:

President, C. H. Root, Red Bank; 1st Vice-President, Harold Hornor, Mt. Holly; 2d Vice-President, Dr. C. D. Cheney; 3d Vice-President, J. H. M. Cook, Essex Falls; Secretary-Treasurer, E. G. Carr, New Egypt.

◆

Washington State Meeting in January.—The Washington State Beekeepers' Association will hold their 21st annual convention in the Farmers' Room in the Court House in North Yakima, on Wednesday and Thursday, Jan. 6 and 7, 1915. We expect a large gathering, and are in hopes to have some celebrated visitors in attendance. We desire the attendance of every member, as we shall discuss the foulbrood law which the committee is now working on and wishes to have passed at the coming meeting of the Legislature.

J. B. RAMAGE, *Sec.*

A NEW FOUNDATION CUTTER

"The Rauchfuss Foundation Cutting Box"

With it, forty sheets of surplus foundation can be cut at one time—the most practical and economical device of its kind ever offered to the beekeeper

An Improvement on the Honey Knife

"The New Cold Handle Bingham Honey Knife"

Above are only two of the several new articles illustrated, described and listed in the

NEW LEWIS 1915 CATALOG
Almost entirely rewritten

It will be issured some time this month. If you are not on the Lewis mailing list, send in your name at once, or you will miss something good

44 pages brimful of good things including 150 illustrations, many of them new and showing articles more in detail than ever before

IT'S YOURS FOR THE ASKING—A POSTAL BRINGS IT

G. B. LEWIS COMPANY

Manufacturers of Lewis Beeware

Watertown, Wisconsin

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JANUARY, 1915

Vol. LV..—No. 1

EDITORIAL COMMENTS

Aster Honey

J. L. Byer, in Gleanings in Bee Culture, says that aster honey is light in color and nice in flavor. Dr. Miller's experience agrees exactly with the Byer description. Ours does also. We have had at one time some six barrels of honey which could not very well be from any other blossom, and it was almost equal to clover honey in color and quality.

Notes from Abroad

The account of our trip abroad will be interrupted next month, to give room for our recent visit to Quebec, Lower Canada and the Montreal convention. But the recital of our visits among European beekeepers will be taken up again in March and carried to completion. So many of our subscribers have expressed themselves as pleased with the "Notes" that we have resolved not to curtail them.

Naphtalin Instead of Smoke

Under the title "No More Smoke for the Bees," in L'Apicoltore, Giuseppe Kossi gives what we believe to be a new way to tame the bees. He rubs his hands with powdered naphtalin, and, carefully opening the hive, lays his hands over the top of the frames. The odor drives the bees away.

Oregon Beekeeping

We acknowledge with thanks the receipt from the State Entomologist of Oregon, Mr. H. F. Wilson, at Corvallis, Oreg., of Bulletin No. 168, on the above subject. A map indicates that beeculture in Oregon is successful, especially on the west of the Cascade mountains. The pamphlet contains hints and may be had by addressing him as above.

Mixing Nectar

It has been asserted by some contemporaries that the worker bees visit only one kind of blossom at one time' and do not go from blossom to blossom indiscriminately. This is true only in part. Probably the best statement is that made by Dr. Miller in Gleanings in Bee Culture: "I suspect that bees do not give a button for relationship, but have preferences; and when there are enough flowers of their first choice they will work on no others (and that's nearly always the case when there is a surplus); but when flowers are scarce enough they have no scruples about mixing."

The Quebec Crop

The report of 91 members of the Quebec Beekeepers' Association for 1914 shows 5845 colonies, spring count, with a crop of 89,558 pounds of comb honey and 210,041 pounds of extracted honey. Beeswax produced, 3243 pounds. Colonies found diseased 338, cured 209.

Honey Plants of the Mississippi Valley

We begin in this number the description, accompanied by cuts, of the plants that furnish honey and pollen. This description will continue during the year. It is the work of our friend Mr. Frank C. Pellett, of Atlantic, Iowa, who now has a national reputation as a student of nature. Mr. Pellett is already well known to our readers. He needs no further introduction.

Bee Meetings

The following meetings are already scheduled for the future as indicated. Secretaries are urged to write, giving date of meetings so that they may appear in these columns:

Washington State, North Yakima, Jan. 6 and 7.

Ontario County, N. Y., Association, Canandaigua, Jan. 12.

Ontario Agricultural College, Short Course, Guelph, Ont., Jan. 12 to 23.

New Jersey State, New Brunswick, Jan. 13 and 14.

National Beekeepers' Association, Denver, Feb. 16, 17, and 18.

Olfactory Organs

"The Olfactory Sense of Insects," by N. E. McIndoo, published by the Smithsonian Institution, is upon our desk; thanks to the courtesy of the author. Mr. McIndoo has already been introduced to our readers on this subject, in our June number, page 198, 1914. This last publication is a work of 64 pages, amply illustrated. We commend it to the students. Right or wrong, Mr. McIndoo shows great research and careful experiments. Time will fully elucidate the matter.

The Missouri Meeting

A large attendance characterized the Missouri meeting held in St. Joseph on Dec. 7 and 8, the sessions being held on the 12th floor of the Corby Building, in the rooms occupied by the Commerce Club, and kindly loaned by them for the meeting.

The meeting was called to order by Pres. Rouse, the reports of the secretary and treasurer were read and approved, and other business of the association attended to.

Two important steps were taken at this meeting. One was the passing of a resolution for the incorporation of the association under the name of "The Missouri Apicultural Society." Another was the determination to get a foulbrood law through the legislature at its coming session. At present the beekeepers are struggling along under the most adverse circumstances in combating diseases The proposed law, drafted by Pres. Rouse and his associates, should remedy this.

There was some agitation also in favor of asking for a law whereby each colony of bees in the State should be taxed a small amount, such levy to be appropriated either directly or indirectly to the furthering of the beekeeping interests of the State. This matter was left in the hands of a committee to do with as they deemed best.

Five States were represented by speakers on the program: Indiana, Illinois, Iowa. Kansas and Missouri.

Mr. J. F. Archdekin read a very interesting paper on the "Rearing of Good Queens." Dr. Bohrer, of Kansas, with his 50 years of experience, presented his manner of making artificial increase, and Mr. M. E. Darby, Missouri State Inspector, urged better methods in disposing of the honey crop so as to increase the demand at the same time. L. E. Altwein talked on the "Management of Bees During a Honey Flow."

Frank C. Pellett, of Iowa, and N. M. Jennings, a veteran beekeeper from Indiana. talked on "Wintering Bees." Both winter out-of-doors, and both insist on plenty of stores and plenty of protection. Mr. Jennings, basing his plan on his long experience, packs his bees with absorbent cushions over the cluster, with plenty of forest leaves for packing on all sides and above. He uses an empty super over the hive-body filled with the same packing, and holds the leaves around the hives by using old packing boxes which are stored away from year to year. His idea is to keep his bees "fat and dry." He states the three prime requisites of good wintering is plenty of good sealed stores, a strong colony of bees, and good protection with ventilation without draft.

Other papers were those of A. V. Small on "Artificial Increase," and O, S. Mullin, of Kansas, on "Carniolans."

Two very interesting lectures were those on "Orchard Spraying" and "Inter-relation of Bees and Orchards." Dr. C. R. Woodson spoke on the former subject and L. Haseman, of Columbia, Mo., on the latter. Mr. Haseman is Entomologist and Chief Inspector of Orchards and Nurseries in Missouri.

The following officers were elected for 1915: President, J. W. Rouse; Vice-President, W. F. Cox; Secretary, Dr. Austin D. Wolfe; Treasurer, J. F. Diemer. Mr. and Mrs. Darby were chosen delegates to the National meeting to be held in Denver in February.

Eggs of Silk Worms

In the "Notes from Abroad" for December, I stated that there are about 12,000 eggs of silk worms in an ounce. This was inaccurate. There are from 35,000 to 50,000 of them in an ounce. Could any of our scientists tell us how many honey-bee eggs in an ounce?

MISCELLANEOUS NEWS ITEMS

Mr. Hopkins to England.—Through the Beekeepers' Gazette (Irish) we are informed that Mr. Isaac Hopkins, of New Zealand, "the father of New Zealand beekeeping," is returning to England. Mr. Hopkins is now 78 years old. For years he has been connected with the beekeeping industry of New Zealand, both as government apiarist and as a writer of articles, booklets, etc., on this subject.

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Let Us Get Together.—[An open letter from the Secretary of the National.] The coming meeting of the National Beekeepers' Association at Denver in February opens up the question of the possibilities of organized effort to uplift the honey business. As secretary of the National, I frequently receive letters asking the benefits of cooperation and the benefits of sustaining the National Association.

In the past, trade and other conditions have not been favorable for the National to assist to any great extent in material benefit to the members. Things have changed until now it is possible to assist in a very material way to "increase the consumption, stimulate the demand and stiffen the price of honey." Does not this appeal to you as being worth while? If you belong already "keep boosting," and if you do not belong, "get in and we can use you." We want snappy men to give life and enthusiasm to field meetings hold them in every State, and in different portions of the State. Get the local people interested. Have them take a part and stir up local enthusiasm. Plans are being perfected to form circuits of contiguous States so as to arrange big State meetings. Publicity and sale plans will be arranged and conducted by local beekeepers in an organized and systematic way.

Other plans are being arranged, and we trust that the honey business is to see a great awakening in the near future. If you are a local producer and have not yet developed your market to its limit, you are losing a valuable opportunity. The time is short when a honey route will be a valuable asset. Next year the National will tell how to develop it.

Your first allegiance is to your local association, and then you owe it yourself to join the National. If you have honey to sell it will aid you to do it. If you buy honey it will assist you. What would a railroad accomplish without cooperation and organization? What can we *not* accomplish with thorough organization? If *every* beekeeper, little as well as big, were to join in the general movement to more and more popularize honey, this country would consume twice the present production at a much better price. If you hang back you delay just that much the desired results. We all agree on one thing if we do not on any other; "Get together and 'boost' to

BEES IN A WELL SHADED SPOT

increase the consumption, stimulate the demand and stiffen the price of honey." GEO. W. WILLIAMS,
Sec. National Beekeepers' Association.

Short Course in Beekeeping.—The Ontario Agricultural College at Guelph will hold its short courses from Jan. 4 to March 19. The short course in beekeeping will last eleven days or from Jan. 12 to 23.

National Beekeepers' Association

A preliminary announcement of the annual convention and official meetings of delegates from affiliated societies, to be held at the Auditorium Hotel, Denver, Colo., Tuesday, Wednesday, and Thursday, Feb. 16, 17, and 18, 1915. It is to be held jointly with the meeting of the Colorado State Beekeepers' Association.

HOTEL RATES.

Room without bath, single, $1.00 per day and upwards.

Room with bath, single, $1.50 per day and upwards.

Excellent café and meal service may be had. The hotel is convenient to all street car connections and adjacent to railroads.

The convention apparently will have ample, comfortable quarters with a large assembly hall, reception room, committee room, etc. The reception room will doubtless be used as an exhibition hall.

NOTICE TO DELEGATES.

The secretary has mailed to each affiliated association delegates' cards, to be used as credentials. It is absolutely essential to send the original direct to Mr. George W. Williams, Secretary, Redkey, Ind., on or before Feb. 1.

The program will consist of official executive meetings and of lectures, demonstrations, etc.

PROGRAM.

TUESDAY, FEB. 16.

9:30 A.M.—Meeting called to order and organization of the convention, appointment of committees, presentation of credentials, report of Credentials Committee, and announcements and invitations.

1:00 P.M.—President's report.

Transaction of business which shall regularly come before the session.

Papers.

8:00 P.M.—General session of the association for the reading of papers and for discussions.

WEDNESDAY, FEB. 17.

9:00 A.M.—Delegates' session for the transaction of business followed by the reading of papers.

1:00 P.M.—General program, continuing the reading of papers.

8:00 P M.—Public session. At this time it is hoped to provjde illustrated lectures and a program of general interest to the public. Arrangements are in hand for this.

THURSDAY, FEB. 18.

9:00 A M.—Business session, concluding the transactions of the association, followed by the reading of papers.

1:00 P.M.—Session for discussions and the reading of papers to be followed by adjournment.

It may be desirable to hold a special session in the evening for those who do not leave town that night. Special arrangements for this will be announced during the convention.

PROGRAM OF PAPERS.

An effort is being made to secure the best talent in the country. Not all will be present to read their papers, but the members are assured of hearing some of the most recent and worthy remarks from the apicultural leaders on this continent. At present, however, it is merely possible to partially list these papers.

The following have promised papers the nature of which is not known. *Expected to be present:

Prof. E. G. Baldwin, Deland, Fla., *Prof. C. E. Bartholomew, Ames, Iowa, *E. J. Baxter, Nauvoo, Ill., *J. M Buchanan, Franklin, Tenn., D. H. Coggshall, West Groton, N. Y., *E. G. Carr, New Egypt, N. J., *C. P. Dadant, Hamilton, Ill., Benjamin Davis, Tennessee, Edgar Elthorp, New York, *Wesley Foster, Boulder, Colo., N. E. France, Platteville, Wis., L. V. France, Madison, Wis., *Prof. Francis Jager, Minnesota, Allen Latham, Norwich Town, Conn., J. W. Leenhoff, Porto Rico, John H Lovell, Waldboro, Me., J. P. Merwin, New York, Prof. Frederick Millen, Michigan, *Dr. E. F. Phillips, Washington, D. C., *Frank Rauchfuss, Denver, Colo.

The following titles have been received:

"Some Legal Phases of Beekeeping"—J. G. Gustin, Missouri.

"Breeding Bees"—Geo. B. Howe, New York.

"Inspection in Iowa"—*Frank C. Pellett, Atlantic, Iowa.

"The Production of Extracted Honey—Apiary Inspection and the Disease Situation in Ontario"—*Prof. Morley Pettit, of Guelph, Ont.

A FEW MEMBERRS OF THE ADERONDACK [N. Y.] BRANCH OF THE NATIONAL

"Migratory Beekeeping"—*E. R. Root, Medina, Ohio.

"Straining and Clarifying Honey"—H. H. Root, Medina, Ohio.

"Autumn Mating to Control Inheritance."—Prof F. W. L. Sladen, Ontario, Canada.

"A Plea for Better Bees"—Jay Smith, Indiana.

"A Competency for the Hive" E. D. Townsend, Northstar, Mich.

"Honey Publicity"—*Geo. W. Williams, Redkey, Ind.

"The Educational Value of Beekeepers' Associations"—A. Y. Yates, Connecticut.

A considerable number of other contributions have been solicited and are anticipated.

The following Committee on Local Arrangements is announced: Directors, Wesley Foster, Chairman, Boulder, Colo., Louis F. Jouno, 4732 West 34th Ave., Denver, Colo., and Mr. N. L. Henthorne, President of the Colorado State Beekeepers' Association, Platteville, Colo. Members are at liberty to communicate with the committee concerning local details in regard to exhibits.

EXHIBITS.

It is impossible to announce the exact nature of exhibits, but supply houses, glass and can manufacturers, as well as others wishing to make a display should address the above committee. Burton N. Gates, *Pres.*

Amherst, Mass.

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Ontario County, N. Y., Meeting.—The 25th annual meeting of the Ontario County Beekeepers' Society will be held in the Court House at Canandaigua, N. Y., on Tuesday, Jan. 12., 1915. An interesting program will be provided. A general invitation to attend is extended to the honey producers of adjoining counties and the State. Come and bring the ladies.

F. Greiner, *Sec.*

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

North Carolina Notes

This is our third summer with bees, and our experience may be of interest to the readers, as we are in the North Carolina mountains which Mr. J. J. Wilder often mentions.

Although my husband is very much interested in bees, he leaves the care of them to me, and I do not see any reason why women cannot be as good beekeepers as men. Women will be interested in something, chickens, flowers, fancy work, etc., to relieve the monotony of house work, and I find bees the most profitable as well as the most interesting.

We started in three years ago by buying five colonies of Italian bees. We thought it would take at least that many to keep us supplied with honey. You can imagine our surprise when we secured 200 pounds and increased to 15 colonies We ran out of patent hives and put them in box-hives. I transferred them this year.

The next year, 1913, was so cool here in the mountains until the last of June that we did not have any honey until just before sourwood bloomed. We had no swarms that year, but sold about $25 worth of honey.

This year has been good, especially the early part. We had a heavy apple and locust bloom. We got a full super of the finest honey from the locusts by preventing swarming, blocking up the entrances and getting them started in the super as soon as we could. I save all the empty combs I can for bait combs, as we produce bulk comb honey. I place the partly-filled frames over a colony that needs feeding in the fall and let them carry the honey down in the brood-chamber before cold weather. Then in spring place one or two combs in the super. I doubled my number of colonies this year, but one absconded. I sold $80 worth of honey at 15 cents a pound here in the country. Some of my colonies that did not swarm produced about 90 pounds.

We live on the west side of the Blue Ridge mountains, about one-fourth mile from the foot, so our bees cross over to the east side, which is about two weeks earlier and a lot better bee-country. There is no sourwood on this side, but we have a great many locusts.

This has been a busy and interesting year for me. I have taken off all our honey and hived every swarm; besides I have transferred four, three for myself and one for a neighbor. I got along so well, and the bees seemed so good with the first colonies I tried, I thought I did not need a veil or gloves, but the bees I transferred for my neighbor were very black. We had only one veil, and I let the neighbor have that, but I soon decided I had rather do without assistance than a veil. I got them transferred finally.

The plan I like best is to let the colony that is to be transferred swarm three times; hive first swarm and unite second with another second swarm, and place third close by the old hive, then in 21 days drum the bees out of the old hive and unite them with the swarm placed by the old hive. I cut out the old combs and place them in the frames which this third swarm has not filled.

Why don't we see more in the Bee Journal from the women? I am sure they read this department. I am a regular book worm, but I read my bee-papers first of all, and am planning lots of things for my bees. Beekeeping is just like getting pay for something you would do for nothing.

[Mrs.] J. T. Reeves.

Laurelsprings, N. C.

Indeed 90 pounds per colony may well look good to you, and it would look good to a good many others, too Too often the big yields alone are given, while the same ones who get the big yields have dead failures from other colonies or in other seasons.

Yes, it is a thing greatly to be desired that more of the women tell us about what they are doing. Perhaps your example may stimulate others.

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Disturbing Bees in Winter

I just read in the American Bee Journal for October, page 353, about disturbing bees in winter. Last winter in the latter part of December, I was moving four strong colonies from a neighbor's place one-half mile distant. I got the bees for the asking. We had about two feet of snow and the hives were entirely covered. We shoveled them out, and as they had no bottom-boards, but were standing on a large wide board, wide enough so that the bees could alight on it, I took the cover of one hive where the bees had died, and placed it on the canvass sheet that was spread on the wagon bed and put the hive of bees on that. After all four were loaded we put the remainder of the canvass over them and went home, placed them on their former board and left them alone until spring.

They wintered all right, and one colony swarmed April 30, but as I went to hive it the swarm left. I had one swarm from that yard two years ago that has been one of my strongest colonies. I think it was also the best one to rear queens from. It filled two stories.

I hope I can get a good crop of comb honey next year. I can sell it easily at the door. I had several calls for honey this season, but had nothing to sell, as my bees did not fill a single section nor start in one.

I am at present (Oct. 16) feeding five colonies with soft candy and sugar syrup, and they consume it rapidly. I spread the candy on paper or pasteboard and place it on the frames, put a super cover over it and close the hive. I have only two Boardman feeders for syrup. We have dry weather at present, so the bees can work, but it may change any day as the rainy season is approaching.

I was told this summer that the foulbrood inspector would come shortly after the last flow, but he has not appeared yet. I know a beekeeper six miles south of here who has at least 200 colonies. He does not read bee journals or books. I heard some time ago that he takes the supers off before the combs are all sealed and the honey ripe and sells it. Of course, people do not like his honey.

Mr. Green has not been able to eat honey for the last three or four years. It makes him sick. He is helping me in my business as much as he can, although he does not understand or know anything about managing bees, but he has always urged me to get all the bees I can, and helps me to get them home. In the spring of 1913 I got four colonies, for the asking, from a family that did not like to go near bees. Last fall I did the same with another party.

I plant all the honey plants, shrubs

and trees I can get. Last year I sowed a sample package of sweet clover, and this summer I gathered some 14 to 16 pounds of seed. I also sowed some borage, and it bloomed all summer and fall until the frost stopped it. I sowed some this spring, but late, and it did not grow until now. I have an herb in the garden called "rue," that is blooming and the bees work on it. I expect to have a good honey-flow from sweet clover next year, as I sowed some on waste land and in the garden for seed. I have a fine location here for bees, a creek is running by with willows and hawthorns. In March, when the snow is going, there appear some flowers we call salt and pepper, and soon after my bee-yard is yellow with the dandelions. I cannot set a foot down without stepping on bees working on them. We have a little orchard with prunes and plums, and will plant more next year or some time later. [Mrs.] MARGARETHA GREEN.

Weiser, Idaho.

Honey is such a wholesome food that it is too bad not to be able to eat it. At least it would be worth while for Mr. Green to make considerable effort along that line before giving up. If he tries eating a very small amount at first, gradually increasing the amount, in time it may not disagree with him at all. It is also possible that it is the kind of honey. Dr. Miller uses a good deal of honey, taking it in place of sugar in his hot drink every day, and yet there are some kinds of honey that he cannot use at all, such as strong flavored fall honey.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Beekeepers of the Pacific

We of the Pacific Coast are always much interested in the personal experience and methods of our eastern beekeepers. We like to see the names and photographs of the prominent men in print so that in a way at least we feel acquainted with them.

This being a strong feeling with our men here, we thought the readers of the American Bee Journal might feel the same about us. We have consequently prevailed upon a few of our leading beekeepers here to give us sketches of their ways of getting results in their chosen work.

This month we will introduce Mr. Andrew Joplin, the largest beekeeper of Orange Co., Calif., who, by the way, is especially strong in the line of spring increase.

METHOD OF MR. ANDREW JOPLIN.

I have been asked to explain how I keep my bees so strong and in such good working condition when the early honey-flow comes, and as I have no patent on my methods, I freely give away the secret.

We Californians usually let our supers of extracted combs remain on the hives in the fall, for sometimes a late honey-flow happens along after extracting season has closed, and the bees gather their winter's store of food.

By Oct. 15 I will have been over all my yards (three in number), closed the ventilators, weighted down the lids. As a part of this examination, I look for signs of skunks in front of each colony, to see if they are feeding on the bees. Incidentally, I will say that a little egg mixed with strychnine put out in shallow cans at the entrance of the hives that are being disturbed usually stops them. These night marauders do more harm than is generally supposed, and if let alone will weaken colonies, and make it possible for them to be robbed out.

After closing ventilators I do not bother my bees much until about March 10. Very rarely do I open the brood-nests of colonies after the extracting season, until the date mentioned above, but that does not mean that my bees are neglected that long. About Jan. 1 to 15 I lift each hive clear off the ground (hefting them, I call it), to ascertain the amount of honey stored, and by a system of marking on the front of the hive I register the condition of each, so I can begin my work of building up the weak ones. My method of marking is in plain numerals from 1 to 5. The lightest ones are marked 1 and the heaviest ones 5. Those that are between the light and heavy are from 2 to 4.

The yard that has the most 1's and 2's calls for attention first. These I put feeders on. My method of feeding is very simple. I take any kind of quart cans or 5-pound lard pails that are thrown away and melt off the top. These cans serve as covers. Then I take milk cans and melt the top off of them, leaving a milk can (small size) or regular feed cups for each cover can. I then bore a ⅜ of an inch hole in the hive lid and place my feed cup beside it, full of feed syrup, and cover all with the quart cover can. The ⅜-inch hole gives the bees access to the feed and the cover can shuts out robbers.

I find it a splendid idea to take a little warm feed syrup and drop it through the hole in the lid onto the combs below, and then blow my breath into the hole, which causes a great commotion among the bees, and they come up and soon find the feed which they immediately begin to devour. After this I have no trouble getting the bees to take the feed from the cans.

I also found it necessary to put a bunch of excelsior in the feed cup, so the bees can get out if they should fall into the syrup.

Understand me now, I am only treating those marked 1 and 2, for from 3 to 5 I consider rich enough to pull through without feeding. The 4's and 5's can be drawn from if I wish to feed some of my weak colonies honey in the comb.

After feeding a few times I can tell the exact condition of the colonies by the way they take the feed below. As soon as a colony is slow about taking the feed down, they should have the supers removed, and they are usually too weak to need so much comb space, so I remove them, putting them upon some hive marked 4 or 5.

ANDREW JOPLIN.

In my location it is often dark, cloudy weather for a couple of weeks at a time during the spring months, and if I did not have feeders on and keep feed in them the weak colonies would starve.

My three apiaries are in a mountain district and are some miles apart, and it keeps me busy during cloudy or rainy weather to keep feed in all my weak colonies, but as that is an essential part of my success in building up my colonies I do it just as the farmer plows and prepares his ground before seeding it. So when night comes and I hear the rain falling outside I feel good to know that my bees have not been neglected, but have feed to eat and are getting stronger all the time.

March is the month to roll up the sleeves and get down to business and go down among the bees themselves, for at this time of the year colonies are of various strength, and if there are many weak ones it means lots of hard work.

In my location we have then only two months in which to build up weak colonies, as the harvest of honey usually commences about May 1, and colonies must be in shape by that time if we would expect them to do their best, whether there is any honey-flow or not.

So about March 1 I begin to work on my weak colonies that I have been feeding since January, examining the queens, which I denominate good or bad by their work in the brood-chamber, and I never fail to find some that need superseding.

The heavier colonies naturally get far ahead of the lighter ones and will start drone-brood, so I hold them back except a few of the best stock that raise good, yellow drones.

Most any time after March I start a hive or two making queen-cells. With me, the Doolittle plan has resulted best, and as soon as the cells are about 9 or 10 days old I pick out some good, strong colony of my darker, or what I call my vicious bees, remove their queen, cage the mature cells and put them in a frame and place them in the warmest part of the now queenless colony.

In about 4 or 5 days these cells are all hatched and the young queens caged. These are critically examined for visible defects or faults. Those passing the examination are now ready for use.

This is where nuclei hives shine. I take 6 of them (3 or 4 frames) and set them in a semi-circle back of the hive with the caged queens. Then I remove the super and take frames from the colony and place one in each of my nuclei. I give each nucleus as near an equal amount of brood as possible. Then I divide the rest of the frames containing honey, being careful not to use drone-combs. Of course, you understand that I raise these combs out carefully so that what bees are clustered on them go with the combs into the nuclei.

Now I divide what bees are left in the old hive so that my nuclei each have like amount of bees. I then take my caged young queens, and to be safe dip them into water, and turn them loose on the alighting-board of the nuclei, and they run in without trouble. Having been hatched in the mother hive, they are already acquainted with the workers and are immediately received.

I now take these nuclei and set them in my apiary wherever I want them, for bees thus divided rarely, if ever, go to the old stand again. However, as a precautionary measure, I remove the hive from the place, leaving the place bare.

I have found that the percentage of queens lost by this plan is very small. The young queens in a few days will be laying.

These nuclei are given great care, and as fast as they need room I give it to them by using a 6-frame, then a 10-frame box, and from that to my regular hive.

I replace all poor queens at this same time, thus building up my colonies so they can do good work when the flow starts in. ANDREW JOPLIN.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Bad Case of Dwindling

"I have a few colonies of black bees that I transferred from box-hives this year. At first they were strong and worked very well but soon dwindled down, and I think now that four of them are so weak the queens have quit laying. They have very little honey (and I haven't had supers on at all), so for the past few days I have been feeding them a little at night. I have also taken out all but five frames in one hive and put in a division-board.

"Moths are bad, and I thought perhaps that was the cause of dwindling at first. These bees, seem to me, enjoy having moths around. Several times I have pinched off a moth's head and dropped it at the entrance, and they would not try to move it in the least. If

Beekeepers' Field Meet held at Chas. F. M. Stone's apiary in Lamanda Park, Calif., last l. The trees are live oaks, and the pole in the middle is for "wireless." Mountains in the background e 5 miles away.

t is foulbrood I can't find any trace of it. The bees are just naturally lazy except when they want to sting. Another peculiar thing is they didn't swarm a single time last spring; something I had never known them to neglect. They were still in the box-hives.

"If you can give me any information or tell me what to do for the above it will certainly be appreciated. Also tell me what you think of the Ocklocknee river for bees, from the Georgia and Florida line down for a space of 30 or 40 miles." J. T. DeLong.

Hinson, Fla.

I don't think you have any serious disease in your apiary, but a bad case of dwindling, partly from natural cause and partly from transferring. If the honey flow is postponed for some reason the bees dwindle. As soon as you find they are running short of stores you should feed. Keep plenty of stores in the hives and all colonies headed with good queens.

[The last recommendation is important. Those colonies may be queenless.—Editor.]

No Honey

"I have made a complete failure with honey production. I ordered some 10-frame hives for chunk honey. I put them up plain without any comb starters. They work all right in the bottom story, but will not work at all in the super. It takes them two seasons or more to fill the bottom story with honey, so you see I have not gotten any honey." H. L. Eason.

Keysville, Ga.

Your case is similar to many others, not because there has been no honey to gather, but because the hives were not properly supplied. I am sure if you had used plenty of foundation both in the supers and bodies you would have had better success. If instructions are not properly carried out with the modern hives, better not buy them, as it is tying up money. Then, too, your 10-frame hives are too large for this section. You could have gotten better results with a smaller or 8-frame hive, but as you have started with the 10-frame hives you had better continue with them.

When the first honey-flow comes next spring transfer the bees you have into modern hives or straighten the combs in the frames which they have already built, which may be crosswise, then put full sheets of foundation into the sections or frames in the supers, and the bees will go up, build comb and store honey. Comb foundation is a great inducement to get them to build comb and get it built where you want it.

Wants to Locate Back in Home State

"I am a city raised man contemplating going into the country, also thinking favorably of bees. I would like the benefit of your experience in choice of literature for a beginner, best kind of hives to use, and probable cost of a small beginning.

"At present I contemplate seeking a location in Cherokee Co., Ga. What have you to say regarding that part of the State?

"My ideas now are for fruit and bees; what they will be when I get on the ground is hard to tell. I feel pretty sure of returning to Georgia this fall or next spring at the latest. I am trying to "line up" the costs of various things theoretically." Edwin Hambly.

Los Angeles, Calif.

The mountain section of our country is good for both bees and fruit, the two would go very well together. Cherokee Co., Ga., would be a very good section to locate in for this purpose, but counties farther north would be better, say Habersham, Rabun or Franklin counties.

Any of the bee literature advertised in the bee-papers would be a great help to you, and the more you read on the subject the better. The 8-frame hive would be more suitable with the regular shallow extracting supers for chunk honey. Fifty or seventy-five dollars well invested in this branch would be a good start.

CHAS. F. M. STONE'S APIARY AND HONEY HOUSE AT LAMANDA PARK, CALIF

A Successful Venture

"Mr. Wilder:—I took your advice and went South last winter and bought a carload of bees near Savannah, Ga., fixed them up and they gathered enough honey to pay expenses, and I carried them back North, starting May 12. My average was 30 pounds, spring flow, and 40 pounds during summer, so I came out ahead. I am coming back again this winter and carry out the same thing, but I want to go to Brunswick or Waycross, Ga., to gather up the carload of bees in any kind of hives and fix them up as I did the carload last season. I bought 'boxgums' for $1.00 each last season.

"I was much surprised at the southern hospitality and enjoyed the Dixie climate immensely. Any information will be greatly appreciated."

New York. A. Irish.

Buying bees in one part of the country, or moving them from one part of the country into another can be made a success if it is done economically from and to such points at each end of the line as will assure good rates.

I don't think you will find any trouble in getting all the bees you want at reasonable prices in either of the sections you mention. I believe you are on the right line in such an undertaking, and the beekeepers would be glad to hear from you again giving more particulars.

Discouraged

"I am a young beekeeper (but not so young a man) and want a little information. I have 8 or 10 colonies and took only about 200 pounds, several of them being weak and not producing any surplus at all. I use the 8-frame hive and shallow extracting supers, but not having an extractor I cut the combs out in nice strips, putting them in large mouth glass jars without crushing, then filling with extracted honey. I have no trouble in selling this at 10 cents a pound, but the trouble with me is that I cannot produce much honey. I think I will get an extractor next year. Should I wire the shallow extracting frames? Don't you think I ought to use the 10-frame hive? Not more than half of my colonies yield surplus; what is the cause of this?

"After the honey-flow was over about June 1, I tried to make six artificial swarms and made a mess of it. I proceeded thus: I took three frames of brood and placed them in empty hives with a comb of honey beside these three brood combs; some had queen-cells and some had none. But I soon found queen-cells on those that had none at first. As there was no honey coming in I had to feed them by putting sugar and water in empty combs, then the robbers got busy and helped eat it up in spite of the fact that I closed the entrance so only one bee could get in and out. In about 10 days I found all my queen-cells empty and only one queen. What became of the others I haven't an idea.

"Is it a good idea to take three brood-frames with no queen-cells and depend upon them to start cells and rear a queen? Did I make a mistake by waiting until the honey-flow was over to make these swarms? Those I started are about all dead. I want to know how to make increase, as that is what I want. I had two natural swarms, and they are doing well."

Sparta, Ga. J. H. Archer.

It is not necessary to wire shallow extracting frames, but it is best to use full sheets of foundation, fastening it well to the top-bars.

No, it is not advisable to adopt the 10-frame hive; for the average location in the South, and to change from the 8 to the 10-frame hive would be far less advisable.

Your non-producing colonies may need requeening or better stock introduced. Your plan of making increase was good if you carried the queen with half of the colony you put on the new stand; otherwise it would naturally be unsuccessful. Your failure was due to making increase at the wrong time, for there was no honey or pollen coming in and the queens had almost stopped laying. Feeding done at such times would not bring about much better conditions. If you had done this a week before the honey-flow ceased no doubt you would have been more successful.

On account of the very poor condition of your bees the queen-cells were torn down before the young queens emerged, and if any did emerge under such conditions they would naturally disappear.

If you would take the old queen with three frames of brood, some honey, and about half the old bees to the new location, the remaining half at the old stand would rear a queen, if the honey-flow was on.

* * *

Wants a Location

Mr. J. J. Wilder:—I am a young man 22 years of age, an orphan and unmarried. At present I am employed in the office of the Missouri Board of Health. For a good many years I have kept bees and enjoy the work very much, and intend to engage in it extensively. I would like to be able to combine fruit growing and poultry raising with it, but my main object is extensive bee-culture.

"I wish to secure a location where I can build up a series of apiaries to a total strength of at least 3000 colonies, and more if possible, covering as large a territory as necessary. I expect it to take me from five to eight years to do this.

"In doing this I want to get into a territory where I will not trespass on an established apiarist and thereby injure both of us. I would also want to be where there is good bee-pasture and good facilities for getting the product to market.

"I have been studying the States of Georgia, Alabama and Florida, and my conclusion is that the best location of any would be from Columbus, Ga., south along the Chattahoochee river; but I expect this territory is already very well occupied, and it would be impossible to locate in it without buying out some one.

"I would appreciate any information that you can give me regarding locations in these States and what location you would recommend."

F. F. Whealen.

Jefferson City, Mo.

If a large bee-business is desired I would not think of combining it with some other line; put all the capital, thought and time in the bee-business at the start or after a season's experience. The Blue Ridge section of Georgia or North Carolina would be a most suitable section to make a combination of the three pursuits mentioned. For an extensive bee-business near the line of Georgia and Florida towards the coast sections would be most suitable on the Chattahoochee river. Yes, the best locations are already occupied.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

National Grading Rules

The National Association grading rules were so drawn that they need no altering to speak of to comply with the net weight law. The stamping of comb honey designated as heavy would be "net weight not less than 13 ounces;" that designated as medium "net weight not less than 11 ounces," and honey designated as light "net weight not less than 9 ounces." This would allow one ounce for the weight of the section.

The greatest advantage of the National rules is that honey fancy in every respect but weight may be sold as fancy under its own net weight stamp. And why is not a section weighing 10, 11 or 12 ounces fancy honey? I will admit there is room for argument there, but it seems to me the only question would be whether a 10-ounce section would in many instances have an even enough filling and be attached to the four sides of the box to be classed as fancy. Of course, if not then the 10-ounce section would have to go into the lower grade in which it properly belongs.

The extra fancy grade of the National rules will not be required by many bee-men for there are not many who have comb honey coming up to the requirements, but the honey is produced and there should be a grade to cover it.

To me the National rules are truly National in scope, and the drafting of these rules is the first comprehensive attempt to obtain rules broad enough to cover the various comb-honey districts of the country.

* * *

"Eat Honey"

What are we to put those "Eat Honey" stickers on? We can put them on our envelopes and letter heads, but we should have honey advertising printed on our stationery anyway. Our glass and tin honey

A TYPICAL COLORADO APIARY

packages should also be labeled, and would just the words "Eat Honey" be more effective than the label? Perhaps I am to understand that we are to stick these stickers upon the fences and bill boards and telephone poles, etc. If that is the idea, it might be all right, but most of us are too busy to do that. We might hire a boy to do it and then we might get into trouble with the Civic Federation that are fighting the bill board nuisance.

A phrase that the writer has printed across the top of his letter heads reads, "Your sweet tooth is a wisdom tooth if you'll eat a little honey." This might be improved by changing to this, "Is your sweet tooth a wisdom tooth? Eat honey."

While I am writing this a package of the stickers has just come to hand from the publishers of the American Bee Journal. I believe that I shall stick them on about everything that I consider it safe to.

◆

The National

The convention of the National Beekeepers' Association will be held at Denver, Colo., in the Auditorium Hotel, corner of 14th and Stout Streets, Feb. 16, 17 and 18, 1915. The convention will be a notable one in many particulars. The number of highly valuable addresses and papers presented will be very large. The exhibits will be extensive, and a custodian and demonstrators will assure the best possible service to the exhibitors and visitors.

The entertainment features will be ample to give diversion from the serious proceedings of the convention. A banquet is being arranged for. There will be an automobile trip if the weather permits. The ladies are to be given a place in the meeting, and special arrangements made for their comfort and pleasure.

The 17 county apiary inspectors of Colorado are all expected to be present, and a special inspectors' conference will be held. Lectures, illustrated with the stereopticon, are being arranged. Beekeepers from many States have already signified their intention of attending. Every one is welcome, and the more the better.

The Local Arrangements Committee: Wesley Foster, chairman, secretary of the Colorado Beekeepers' Association.

N. L. Henthorne, president of the Colorado State Beekeepers' Association.

L. F. Jouno, treasurer of the Colorado State Beekeepers' Association.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Smoke Method of Introducing Queens

The discussion of the smoke method of introducing queens is tabooed in the American Bee Journal for the season, page 404. Judging by the remarks of our friend A. C. M, in the December issue, the Editor's decision is wise, as a continued discussion would certainly show up "fireworks" on the part of our friend, and where there is "fire" there is sure to be "smoke." As one of the wretches who have grievously offended our super-sensitive upholder of the smoke method of introduction under any and all conditions as being infallible, I wish to humbly apologize for being so stupid as to lose two queens by this new (?) method and for being so doubly stupid as to report my experience.

◆

Systematic Requeening

Referring to the advisability of systematic requeening as compared with the let-alone plan so long as the queen is doing good work, I agree with Dr. Miller when he says, "I do not believe I would gain enough by taking the requeening into my own hands to pay for the trouble." If I could have all queens superseded when two years old, I believe it would pay me big if it were not for the simple word "trouble" which the Doctor uses.

By "trouble" I would include an immense lot of work in requeening, such as hunting out the old queens and replacing with young queens, not to mention the fact that no matter what plan was used, many of the latter would turn up missing either from being lost in mating or other causes. But if I had some sure plan that entailed very little work at a time when we are very busy anyway, and could have all my 2-year-old queens replaced with good stock, I would jump at such a proposition.

◆

Snyder's Introducing Plan Practiced by H. G. Sibbald

The plan of queen introducing, given on page 405, as practiced by S. W. Snyder, of Iowa, is similar to the one used by our well-known apiarist, H. G. Sibbald here in Ontario. Mr. Sibbald kills the old queen and rubs her body over the cage in which the new queen is to be introduced, believing that the odor of the old queen makes introduction doubly sure. He has splendid success. Needless to say, I wish to assure friend Arthur C. Miller that the "other fellow" tells me it is the "odor" of the old queen that makes the method successful—this explanation is just to save myself from getting trounced for things I am not responsible for, when goodness knows there is enough I should rightly answer for without assuming other people's burdens. As a secret for the Editor alone, I will just add that I firmly believe that there is a lot in the odor theory, and have yet to see something more convincing than has yet appeared to convince me differently.

◆

"Eat Honey"

Much has been said during the past few years on advertising honey, much of the discussion being practicable and much of it otherwise. The simple injunction, "Eat Honey," as proposed by Dr. Bonney as a slogan for advertising honey, is the best thing I have yet seen. The text is extremely short, and if displayed prominently and often by beekeepers all over the country, in many cases the words will be "stickers." They will be remembered by multitudes, while lengthy dissertations on the value of the product, etc., will have been forgotten.

By all means let us use these stickers by the thousands; they are cheap enough, no excuse in that line. Just now, unfortunately, we are not in a position to use any ourselves, as we have no honey to sell and have been turning down orders all fall.

◆

Granulation of Two to One Syrup After Stored in Combs

Friend McKinnon, of St. Eugene, Ont., the beekeeper who reported granulation of the two to one syrup after it was stored in the combs writes me this year the colonies wintering in the cellar that have been fed on a much thinner syrup than the standard mixture, are showing unmistakable evidence that granulation has occurred again with this thinner syrup. He says that granules of the stores are thickly in evidence on the bottom-boards, and I can plainly see that Mr. McKinnon thinks we are all mistaken when we have no granulation under like conditions and with a two to one mixture.

Frankly, I cannot understand where the trouble is, and while firmly of the opinion that we have never had any of this trouble, I shall be very watchful this winter and next spring to try and detect signs, if there are any, of waste of good stores.

◆

Reciprocal Rights of Neighbors

Pardon me, Mr. Editor, for asking you to print once more a sentence in last month's American Bee Journal, taken from L'Apicoltore: "But the best way is always that of accommodating gentleness with the observance of reciprocal rights and duties of kind neighbors." More than once I have seen cases where I felt bound to take sides against a beekeeper when my sympathies were naturally with him. If the sentiments expressed in the quotation were carried into effect, many times, beekeepers would have done differently. This is not insinuating that beekeepers are always to blame in the little troubles that arise, as people are often prejudiced and ignorant in regard to bees, and make preposterous claims of trouble caused by them. But this does not alter the truth that my bees have not the right to cause trouble and annoyance without recompense.

Some time ago a beekeeper found fault because a near neighbor complained about the bees stinging members of his family. He made little attempt towards reconciliation, and I quietly asked him if the tables were turned and his neighbor kept a cross bull running at large in a place he (the beekeeper) or his children had to frequent, would he make any complaint, especially if the owner of the animal arrogantly said he would not confine the trouble maker or make allowance for damages.

This may be putting the matter too strongly, but do not forget that while we treat bee stings as a trivial matter, many would prefer to cross a field where a cross bull was at large rather than to face a few angry hybrids. Let us endeavor to follow the Golden Rule. If we try to do as we wish to be done by, these little difficulties will clear off nicely without the aid of lawyers and attendant law costs, not to mention all the bad feelings that are engendered when our affairs are ventilated in the public courts.

Early Winter—The Outlook

An exceptionally warm fall, followed by an early winter, is our monthly report from here. At this date, Dec. 14, we have already had two days with zero temperature, and bees had no general flight after the last days of October, although they had a partial flight in some yards about Nov. 10. This is earlier by nearly a month than last year, as bees flew freely last December on at least two occasions.

Naturally this means a longer confinement for out-of-door bees, assuming that spring flights come as in other years; and in the same proportion chances of successful wintering are so much poorer than last season, especially in hives where the honey is of uncertain quality.

NOTES FROM ABROAD

By C. P. Dadant.

We left Milan early in the morning, in a thick fog. But as our train reached the fields, the atmosphere cleared and we had a fine day of sunshine. The plains of Lombardy are very level, although the mountains show on the northern horizon. The fields are small, surrounded with hedges of locust trees trimmed down. That is why we heard so much about locust honey. They also have sycamore and poplar in the hedges and, in spite of the trimming, these trees make a very thick shade over the narrow roads.

The grapevines are trained on trees planted in rows instead of stakes or posts. They hang to them in festoons that are very pretty, especially when full of fruit. As there is no timber in the country, their only fuel is secured by keeping the trees trimmed. This prevents them from growing tall enough to shade the cultivated soil.

Corn is grown in small fields exclusively for human consumption and is gathered in baskets carried by hand from the field to the home. We caused great astonishment among some of the country people when we explained to what extent corn was grown in Illinois and how many hogs some of our farmers raised.

Irrigation is necessary to keep up a sufficient amount of moisture. There had just been a big rain and all the ditches were full.

The greatest cultivation of this region is that of the mulberry, to feed the silkworms. They are in rows like fruit trees. As their leaves have to be plucked regularly for this purpose, the trees soon suffer and dwindle. So young trees are constantly planted to replace the old ones which are worn out from too constant plucking.

A great contrast exists between the peasants' homes with low roofs, small windows and dark-looking interiors, and the fine villas and palaces of the higher classes, painted with all sorts of designs, often representing mythological or biblical subjects, surrounded with balconies, pergolas, terraces and fine gardens. The vegetation of warm climes is everywhere apparent, palm trees, fig trees, olive trees. But it is not far enough south for orange trees. They have quite heavy frosts and snows north of the Apennines.

We passed through beautiful Brescia. Its houses and villas are spread to the top of the neighboring hills. There is a pretty legend about this city and the famous Bayard, "the knight without fear and without reproach," who was wounded there in 1512.

A little later we skirted the south shore of the Lake of Garda, which extends 37 miles down from the Tyrol mountains of Austria. It is as pretty as Lake Maggiore.

As we traveled toward Venice, we saw the farmers doing their fall plowing with oxen or cows. The ground is of a brick-red color and must be very hard, for they had from 6 to 12 oxen hitched to a single plow. These lands, near Venice, are only 30 to 40 feet above the level of the Adriatic. The streams that flow from the mountains are walled on each side to keep them from overflowing the land during freshets. But the centuries have brought sediment, sand and gravel, and now some of those streams are flowing on a ridge, banked on both sides and a number of feet above the roofs of the peasants' homes near by.

A little before noon we crossed on a low bridge, over a mile in length, the shallow lagoon which separates the main land from the former "mistress of the seas," beautiful Venice. At the station a "facchino" (porter) conducted us to a gondola and we found ourselves gliding softly and noiselessly among tortuous and narrow canals or water streets to our hotel, where the dark-eyed gondolier landed us with the pretty exclamation, "Ecco!" (There you are!)

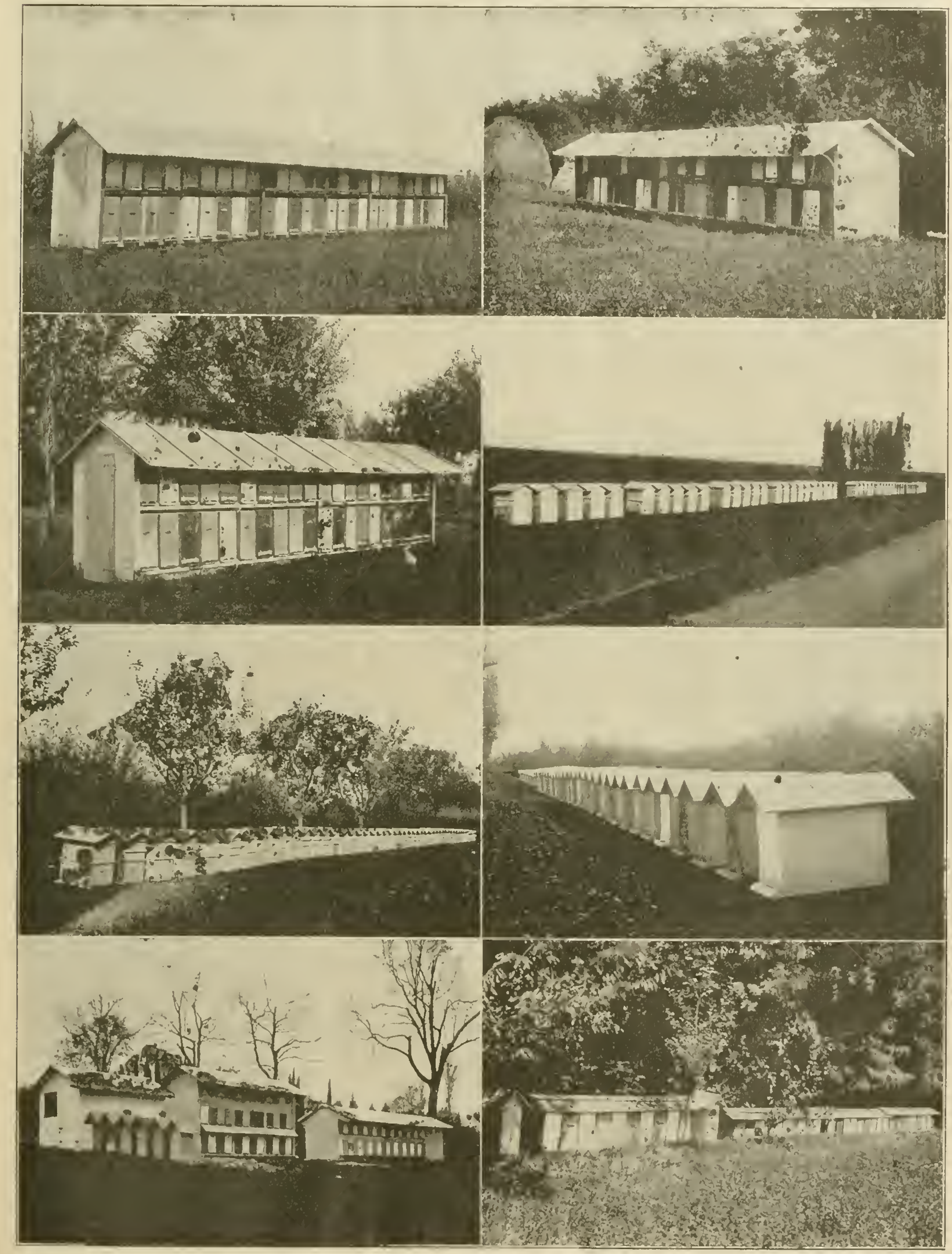
If we were to describe Venice and our stay there we would tire the reader. Such a narration is outside of the limits of a bee-paper. We spent only two days there. They were well filled with enjoyment.

Early on the morning of Sept. 8 we left for Bologna, passing through Monselice, from which town we imported hundreds of queens some 40 years ago. But our correspondent there, Fiorini, has long been dead. At 10 o'clock we reached Bologna, and in the waiting room met our old friend, Count Visconti. In a few minutes more we found Dr. Triaca, with Prof. Attilio Cotini, of Ancona, the manager of the Federazione Apistica Italiana. This eminent apiarist had come to meet us and escort us to Faenza, Forli and Ancona.

E. Penna, of Bologna, Italy

Now comes the most interesting part of our entire voyage, a visit to the summer home and apiary of Mr. Enrico Penna, located some 3 or 4 miles from the city of Bologna. Mr. Penna, a widower, spends the summer in this villa, with his father, mother, sister and daughter. The estate, composed of some 40 acres on a pretty hillside, is entirely devoted to bees. Hives and nuclei are everywhere, in the park, in the orchard, in the vineyard. This is a queen-rearing establishment, but he has seven out-apiaries for honey production. There were on these grounds, at the time of our visit, 620 nuclei for queen-rearing. These are not baby nuclei, for they contain each 5 frames about 8x10 inches.

This is by far the finest and best



PENNA'S APIARIES FOR EXTRACTED HONEY. (The two lower ones are also used for nuclei.)

conducted apiary which I have ever seen anywhere, all things considered. The apiary of Mr. Mahon, mentioned in our July number, is perhaps ahead of it in a few particulars, but there is no comparison possible between the two, owing to the magnitude of this installation. In 1913, Mr. Penna reared 5226 queens, of which 5141 were shipped away as follows: In April 97, in May 929, in June 965, in July 1011, in August 1143, in September 996. These were all distributed on the European continent. His losses in the mails of Europe are less than one half of one percent, while 50 percent of the queens sent by him to America at different times have arrived dead. He ascribes the loss to their being smothered in the mail sacks while crossing the ocean. For that reason he has discouraged orders from America. So our readers will understand that I am not trying to give him free advertising. But I hope that some method may soon be devised by which queens may be sent regularly across the seas without loss. Otherwise the old method of shipping large lots by express may have to be continued.

After having returned home from Europe, we corresponded considerably with Mr. Penna, and arranged with him to make experiments on shipping queens from there to us. But only a few queens had been mailed when the European war began and the delay in the mails compelled him to desist. These experiments will be renewed as soon as the war ends.

Mr. Penna's Expert Apiarist.

Mr. Penna agrees with Doolittle in stating that "after very long journeys, queens often lose their qualities as layers though they may remain valuable as breeding queens."

Mr. Penna rears his queens by the Doolittle method, with improvements of his own. He is very thorough, has plenty of bees to fall back upon, and whenever a nucleus for some reason fails twice in succession in producing a fertile queen, it is broken up and a fresh lot of bees and combs used in it. So he has no worthless nuclei. He has two bee-houses on these grounds. In one of them he keeps 50 choice colonies for queen-rearing from the artificial cell-cups. The laboratory for making cell-cups and transferring larvæ and royal jelly also contains a bee-house with 9 or 10 of his very best colonies to supply the royal larvæ. This laboratory is maintained at the proper temperature and hygrometric conditions, during the transferring of the larvæ, for he has noticed that a too dry atmosphere tends to dry up the larval food, which becomes hard and unfit for the tender grubs. So he has both thermometer and hygrometer in the room, and the shortage of moisture or of temperature is made up by sprinkling the walls and the floor with warm or cold water, as the case may require until the proper conditions prevail. But let me quote Mr. Penna's own words:

"I formed my 620 nuclei in April, taking bees for this purpose from an apiary which is situated 1½ kilometers distant. The queens have been reared by 48 colonies. It is a strict rule with us that no colony must have more than 16 cells to care for at a time, and that no colony is to start new queen-cells until the preceding lot has been completed and taken out. In this way, by not overloading the bees and by feeding every day, I obtain the best results. Transferring larvæ and royal jelly is advantageously done in damp warm air, temperature 25 degrees C. (101 degrees F.), and hygrometer 70 degrees. Crossing is another capital point in queen-rearing. For this purpose we confine with drone-traps the drones of the colonies that furnish the queen larvæ, while rearing drones from the colonies which are nursing the queen-cells and allowing them to fly freely. For honey production I have seven apiaries, but the honey crop has been unfavorable this year."

Mr. Penna is a linguist, speaking and writing both French and English. This has enabled him to become acquainted with the best queen-rearing methods. He employs several men, one of whom has become so proficient in the transferring of larvæ that he does not even damage the cells from which they are taken when transferring them to cell-cups. Several of the kodak pictures which we reproduce herewith were taken by Count Visconti. The others have since been kindly sent to us by Mr. Penna.

The conditions of queen-rearing in this apiary are unique. This is the center of Italy, with no opportunity for mismatings. The selection of breeders is carried on in the most practical way, and in addition to all this our friend is a man of wealth, who does this work as a pastime. We are not astonished that he should be unable to fill all the orders which he receives. He stated that he had to refuse about 600 during the season. However, there are others following his example, and in our next article we will show Mr. Piana doing similar work.

We saw for the first time a curiosity of which we had already heard, a hive closed with padlock and key. Not that any of those nuclei were closed in that way, but it appears that when honey-producing colonies are kept in spots easily accessible to petty thieves, it is often thought best to protect them in this manner. This appears to us more of a prejudice than a necessity, for dishonesty is not any more apparent in Italy than in our own country. However, there is perhaps more stealing of trifles there than with us. Our thieves do business on a larger scale and prefer ready money to honey.

Towards evening our host brought out his touring car and we speeded towards the city. Bologna has a style all its own. From a height nearby we saw it beneath our feet, churches, monuments, towers, etc. We rode back and forth among its wonders.

But we could not remain. That same evening, accompanied by our three friends, we went towards Faenza. This will be the subject of the next letter.

CONTRIBUTED ARTICLES

Super Economy

BY W. E. BOWE.

A GENTLEMAN several years my senior once said to me, "My boy, always take a thing when it is given to you and say thanks, then if you don't want it throw it away." The above applies in the case I am about to describe, only I didn't throw anything away.

Having gotten the bee craze several years ago, I was led into using the 3⅝x5x1½ inch sections, a box which I think will never become popular in this part of the country. Of course I bought fences and supplies to match, and have used them for several seasons. Lately I was offered a quantity of 4¼x4¼1½ plain sections for nothing if I could use them. I hardly knew what to do, as I was certain my fences would not fit, neither had I any section holders.

Rather than buy an outfit for my supers, I hit upon a scheme which as far as I can see is going to fill the bill. I sawed out 35 pieces 13-16x1½x18 inches, and 105 pieces scant ⅜x1 13-16x4¼ inches, enough for five supers. By placing one of the 18-inch strips on the bottom tins of a super, and one of my old 3⅝ inch fences either side, I set in the four sections with a ⅜x4¼ piece between each. This nicely filled the bill for length, leaving a slight projection of the ends of each fence above all. Between these projections and on top of the section I laid one of the ⅜-inch strips which I formerly used in the old super for a bottom slat. This slat fills the super to the top, and will serve to keep the section cleaner, I believe. Of course, each piece must rest firm to avoid all possibility of the bees plastering them solid with propolis. The 13-16x18 inch slat being on the bottom raises the sections up so that they catch the ends of the cleats on the fences. The 1 13-16 inch pieces just reach from fence to fence and pre-

PENNA'S APIARIES OF QUEEN-REARING NUCLEI vent all side play, while the cleats on the fences themselves space in such a way that the sections are all held a bee space apart.

I submit the above hoping it may be a help to some one, as a little lumber can generally be found and cut up whereas we often dislike to cut up a five dollar bill for a lot of new supplies which may never be used again.

Elgin, Ill.

Sweet Clover Bloat

BY A. F. BONNEY.

THE following letter from Mr. Aldrich is not a surprise to me, while I had nothing to lead up to the article he alludes to, save my inherent doubt of what everybody believes:

"I have just read your article in the October issue of the American Bee Journal, and notice what you say regarding sweet clover. You say we do not know that it will not bloat cattle. The fact is it will to such an extent as to kill them, under certain conditions. A few years ago I had a 40-acre field of sweet clover pasture, and during the month of May lost a very fine 2-year old heifer from sweet clover bloat. Day after day the bunch was driven to the lot about 9 or 10 o'clock a.m. and fed on old hay and other ways fussed with until their sides would come down a story or two. There was a patch of alsike in connection with this pasture, and I gave it full credit for the bloat. But when I found this one dead before it got to the alsike, and others bloating badly, I decided it was the sweet clover or the thought of the alsike ahead of them. This was the first and only season we had any trouble from sweet clover bloat. But in the spring of 1913 my neighbors were bothered the same way, with their stock.

"Sweet clover is getting a lot of puffs, but it is worth all that it gets. It is about 18 or 20 years since I began sowing it. A few old farms that I had rented and salted with clover helped advertise it in this section.

"It is a friend to the beekeeper because it is the surest clover crop. On the other hand, it is the poorest clover honey we have. Some years it would not be fit to eat if there was not something else stored and extracted with it.

"Nevertheless it is the poor man's friend." B. A. ALDRICH.

I figured that we had no good evidence that sweet clover, when eaten inordinately, would not produce bloat, or what I think is fermentive indigestion. Unfortunately for those who contend that it will not, there is such a small percent of sweet clover eaten by cattle in proportion to that consumed of the white that we have no data, or, I might say, not enough information to enable us to form a conclusive opinion.

At the present time we have not a whit of evidence that either the bitter principle of sweet clover or the cumarin will prevent indigestion in cattle when the stomach is overloaded with clover. So far we have but the one case, or cases, reported by Mr. Aldrich, and knowing the gentleman as I do I have a great deal of respect for his judgment. The first time I met him, in Des Moines, when we had our first State association meeting, I steered him up against a good hot dish of *chile con carne*. I was then not long out of Mexico, the galvanizing of my latin insides was still intact, and the mess was a treat to me, but while the tears came to his eyes, he never flinched, but finished the dish, smiling. Such a man always has my profound respect.

Buck Grove, Iowa.

[This matter of bloat in cattle from sweet clover is worthy of further investigation. We will be glad to hear from beekeepers on this subject.—EDITOR.]

PENNA AND HIS APIARISTS WITH DADANT. (The tall man is Mr. Penna.)

Brief Rehearsal of the Season of 1914

BY G. C. GREINER.

WITH the gathering up of the bee-feeders, the removal of the last supers and queen excluders, and shifting the bees to winter position, the honey season of 1914 and its bee-yard work is practically ended. If feeding, where necessary, has been properly attended to, it remains only to assign our bees to their winter quarters as the last outdoor work for the season. These may be indoors or out; either will give satisfactory results if properly managed. Much depends upon locality and season. I prefer and practice wintering on the summer stands.

The accompanying photograph is a center view of my apiary as it appeared during the height of the white-clover honey flow. As nearly as the short flow would admit the yard was managed in every particular as described in my four articles on "Doubling the Yield of Surplus Honey," in the American Bee Journal last spring. In spite of the poor season and a little disappointment with my queens the results have again been such that my new method is proving itself more and more a complete success in every direction.

As will be seen from the picture, the yard was run for both comb and extracted honey. All colonies with half-story supers are comb-honey producers and those with full-depth supers are run for extracted. Nearly all of the latter have two supers. Some of the more ambitious ones needed a third, but as I did not feel safe in the building up of sky-scrapers and have them tumble over on account of their dangerous proportion between height and foundation, I resorted to exchanging empty combs for full ones when they needed more room. I use an 8-frame hive of the jumbo pattern, and seven of these frames in the supers. When well filled, ready for the extractor, one of these supers weighs about 85 pounds, and yields from 58 to 60 pounds of extracted honey, making about 120 pounds for the two. Besides, taking away two in some cases, even three of the heaviest combs with the bees during the forepart of the honey-flow when equalizing, and again when exchanging two or three full combs for empty ones during the latter part of the flow, brings the yield of some of these colonies to about 150 pounds of white clover honey.

Although we had not what we might call a buckwheat honey flow, some of the better colonies started in quite well for a few days, but unfortunately unfavorable weather setting in, they broke off as abruptly as they commenced. Thus the buckwheat honey crop proved almost a complete failure, and the little we did get was of poor quality. Only a few colonies had a portion of their center combs capped, but the greatest share was unsealed honey.

In making a rough estimate 25 pounds would probably be all that could be added to the above 150 pounds, making all in all 175 pounds as the yield of one of my best colonies, equalling 350 pounds for spring count. This, of course, is the extreme. My bees have not averaged those figures by many pounds; 135 pounds, spring count, is all I extracted.

The reason why my yield has not been heavier, is because I had to depend too much upon foundation. The 46 sets of combs which I burned up three years ago, when battling with foul brood, necessitated an equal amount of foundation to make up the deficiency in the line of extracting combs. I found by repeated observations that the difference between foundation and drawn combs in regard to storing surplus is about one-half in favor of the latter. To offset the less yield in surplus, I have the satisfaction that my bees are quite heavy with winter stores. A very few were a little below standard weight for safe wintering, and these I supplied with heavy combs in exchange of some of their light side combs.

As an additional description of the photograph in regard to the comb honey produced in this yard, I will make a few replies to Miss Wilson's remarks on pages 263-4 of the American Bee Journal. I wish to thank Miss Wilson for her friendly comments and criticism on my method. It is a pleasure to converse with a beekeeper, especially a lady beekeeper, who understands these things without being obliged to enter into every little detail. I fully agree with Miss Wilson that any of her strong colonies will produce enormous yields, when conditions are favorable, when we have a freak season, as we had last year for instance. Years ago I was a strong advocate of strong colonies. I believed, as do most all prominent beekeepers, including Miss Wilson, that one strong colony is more profitable, will produce more surplus honey, than two weak ones. But since I have perfected my new method I have changed my mind. I have the proof of the pudding right in my honey house (or had it before I made so many market trips), that two of my weak colonies that can be crowded onto two supers by far outdistance any one of her strong colonies that have five or six supers overflowing with bees.

It happens that I, too, took six supers from my best colony, five from a number, and four from a majority of them. All these were full supers, no empty ones as Miss Wilson says some of hers were. They were not finished honey, but as nearly finished as I allow them to be at that time, something like No. 3 of the illustration, that accompanied the articles above mentioned. However, all were finished between the white clover flow and the time we generally have our buckwheat flow. Now, if Miss Wilson will bear in mind that all of my comb-honey-producing colonies are only half swarms, all having been divided during apple-tree bloom, she will see that it means 12, 10, and 8 supers for spring count. Not a bad showing for a two weeks' honey flow.

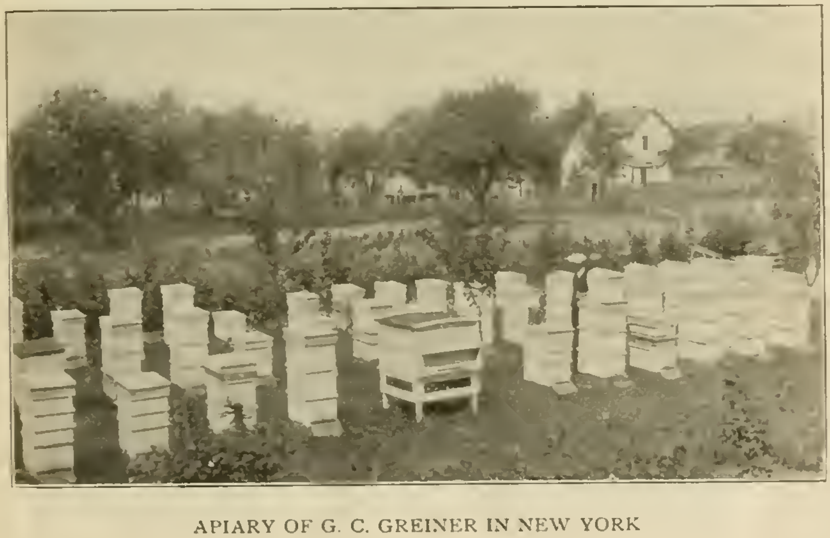
Besides this finished honey I have two stacks of extra fine bait sections for next season, all cleaned out by the bees. When doing my feeding for finishing I sorted out all sections that were not sufficiently advanced to promise finishing by feeding a paying venture. These I extracted for this purpose.

In listening to a discussion between Mr. Wilder and the writer on the number of supers, I am quite sure Miss Wilson would not be the recipient of the enjoyment she anticipated. We are too much of one mind. We agree to the letter, when Mr. Wilder says: "The great trouble with the average beekeeper is he hasn't supers enough." I was caught in the same boat. When the white clover flow started so profusely I imagined I would not have the necessary outfit to accommodate the crop, and as a precautionary measure I ordered at that late hour an additional supply of supers, sections, and super foundation. The section holders (brood-frames) I manufacture myself from strips ordered from our local planing mill.

As it turned out I did not need the goods. My season's crop of section honey consisted of about 5¼ supers, equal to 126 sections all finished honey per colony, spring count. The only difference in our management may be Mr. Wilder leaves all his supers on the hives until finished, and I take them off whenever I consider it the most advantageous for my method. As the picture plainly shows, some of the comb-honey producing colonies have three supers. The top one is taken off at the first opportunity. As the third super is not given until the upper one is ready to come off, the bee-escape is slipped under it at the same time the third is given, which, of course, is placed under the others.

As a closing sentence to the foregoing report, I emphasize a few additional facts. The past season's experience proves anew that my method insures practically perfect swarm control. I had one normal swarm from a comb-honey producer, and three superseders from colonies run for extracted honey. After the last filler was removed and the last comb inserted in its place shortly before the opening of the white clover flow, not a brood-chamber was opened or in any way interfered with to the present day except a very few that needed attention. No hunting of queen-cells, no clipping of queens, no shaking of swarms, no complicated contraption, etc., was necessary to prevent swarming. All my time could be applied to the management of supers and taking care of the crop.

La Salle, N. Y.



APIARY OF G. C. GREINER IN NEW YORK

Sweet Clover

BY J. G. MOSIER,

Agricultural Department, University of Illinois

SWEET clover has been growing for many years along our roadsides, ditches and in waste places. Men have been slow to recognize its possible agricultural value. By most farmers it was looked upon as a very undesirable weed, and that it must be kept out of our cultivated fields at all hazards. It has not spread into our cultivated fields to any extent, due probably to the ease with which it is killed by plowing.

Sweet clover is a legume and is found generally distributed over Illinois with the exception of the southern unglaciated area, and the lower Illinoian glaciation. There are two species, both of which are biennials and cultivated to some extent.

The white flowered species (*Melilotus alba*) is most common and the most desirable on the farm because of the larger productiveness in both organic matter and seed. The yellow-flowered species (*Melilotus officinalis*) is not so commonly distributed as the other and is not as desirable for the farm. Other species are known, but require no attention here. The two species mentioned differ in their habit of growth, the yellow being more diffuse or spreading.

SOILS.

Sweet clover will grow on almost any kind of soil that is not acid and that is fairly well drained, provided the proper bacteria are present. Acidity is fatal to it. It will not do its best on soils that are even slightly acid. It grows vigorously in abandoned limestone quarries, gravel pits, hillsides where there is an abundance of limestone present, and on practically every type of soil in the northern two-thirds of Illinois. These soils embrace stony loams, gravelly loams, sands, sandy loams, silt loams, clay loams, clays, peaty loams and peats. It even grows on alkali soils where it is difficult or impossible to grow grain crops. A soil never becomes so poor that sweet clover will not grow, provided limestone and the proper bacteria are present. It will grow luxuriantly on gullied and eroded hillsides that are so low in organic matter that nothing else will grow there. Hence, it is a most important plant for the improvement of waste lands. The thousands of acres of abandoned, eroded land could be improved better by sweet clover than any other crop.

Sweet clover is as sensitive to acidity in the soil as alfalfa, and the same soil treatment is required as for alfalfa. To put the soil in good condition to grow either alfalfa or sweet clover, three or four tons of ground limestone per acre should be applied to most of the soils of southern Illinois. In the central and northern part of the State, practically all the timber soil and the rolling part of the prairie land is acid or becoming so, and one or two tons of limestone are necessary for complete success with sweet clover. Many failures from shortage of limestone are attributed to other causes.

A simple test for the presence of limestone is to pour hydrochloric acid directly on the soil. If effervescence results, the soil contains limestone and is not acid. Another test is to use blue litmus paper. Make a ball of the moist soil, break it open and insert a strip of blue litmus paper, pressing the soil together again. Leave for 5 or 10 minutes and if the paper changes to red, the soil is acid.

SEEDING SWEET CLOVER SEED.

Seed may be purchased in two forms, hulled and unhulled; that is, still enclosed in the shriveled pod. The former is much more satisfactory in almost every way. In this condition the seed resembles alfalfa seed. The unhulled seed contains besides the shriveled pods around the seeds more or less impurities, such as sticks, etc., which render it difficult to sow evenly.

As a general rule sweet clover does not give a high percent of germination because of the dense seed coat which the moisture cannot penetrate readily. These are commonly spoken of as hard seeds. Nearly all seed contains a quantity of these that do not germinate the first year. They are more abundant in southern grown seed. In 22 samples from different sources, southern grown seed contained 60 and northern grown seed showed 43 percent of hard seed. The germination was 14 and 37 percent respectively. At the Ohio Experiment Station the average percent of germination of 37 samples tested by the botanical department was 29.14. Methods of scratching or scouring the seed coat to permit water penetration are devised which will largely overcome the difficulty of poor germination. This fact of poor germination requires the use of a much larger amount of seed than would otherwise be necessary. It is advisable to sow from 12 to 15 pounds per acre of hulled seed and from 20 to 25 pounds of unhulled seed,

TIME OF SEEDING AND SEED BED.

The time of seeding varies somewhat with the nurse crop. Early spring is the best time. The seed should be sown in the same way as red clover with a light seeding of oats, or still better, barley. When seeded with wheat it may be sown in January, February or early March so that the freezing and thawing may bury the seed in the soil. This early seeding also gives longer time for the moisture to soften and penetrate the seed coat and give germination. Seeding in the latter part of July may be practiced successfully if the season is favorable. Late summer or fall seeding is not advisable in this latitude as it is liable to heave out during the winter.

The preparation of the seed bed seems to be of secondary importance. The crop does well on a well prepared seed bed, but does surprisingly well on a poorly prepared seed bed. Weeds are the great enemy of young sweet clover, and it is much more important that the soil be free of weeds than that the crop have a good seed bed. A nurse crop helps to keep the weeds in subjection. On gullied hill land it is not necessary to attempt to prepare a seed bed. The seed may be sown in late winter or a number of young plants transplanted, and in a few years transform this waste land into productive pasture land. It must be remembered that limestone is necessary on nearly all eroded land in the State.

INOCULATION.

Sweet clover being a legume requires the presence of certain bacteria in the soil to produce satisfactory results. This organism has been pretty generally distributed along the roadsides with the mud carried on vehicles and on bottom lands by floods. The higher cultivated lands of the State do not generally contain this germ, so inoculation is necessary. Either one or two methods may be employed.

1. Soil transfer method: Soil is obtained from where well infected sweet clover or alfalfa has grown the past year and scattered over land to be seeded, at the rate of from 300 to 500 pounds per acre. This may be done with a shovel. The harrow should follow immediately to cover the soil and prevent the sunshine from destroying the bacteria and also to distribute the inoculating material somewhat uniformly through the soil.

2. Glue solution method: In this method the infected sweet clover or alfalfa soil with its bacteria is glued to the seed and inoculation produced in that way. About eight ounces of furniture or carpenter's glue should be dissolved in a gallon of hot water, which, when sufficiently cool, should be sprinkled on the sweet-clover seed at the rate of about one quart to a bushel of seed. The seed should then be stirred so as to moisten it uniformly. About three quarts of the dry, pulverized soil should be added and thoroughly mixed with the seed. If the work has been well done each seed will have a coating of infected soil around it. The seed should be dried and is then ready for sowing. A safe precaution to be taken is not to allow the sun to shine on seed before it is covered.

The fact that sweet clover is growing

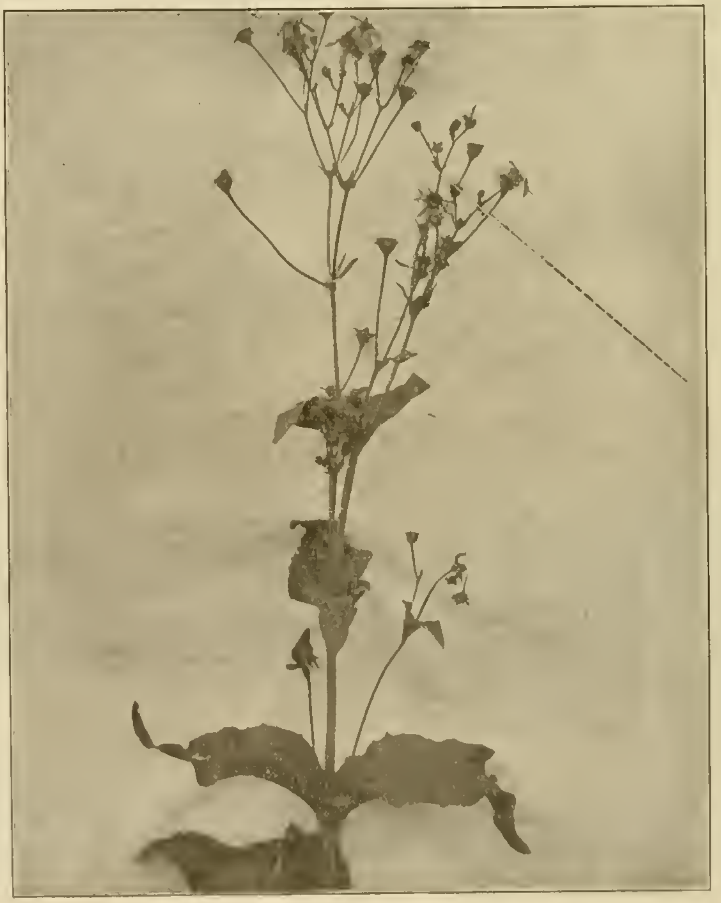


FIG. 1.—CUP PLANT OR ROSIN WEED

luxuriantly along the roadsides does not necessarily prove that the adjoining fields contain the proper bacteria. It is always well to make sure, and inoculation is *one* of the conditions that must be complied with in order to be reasonably sure of securing a stand.

Champaign, Ill.

(*To be concluded next month.*)

The Honey-Producing Plants—"Yellow Fall Flowers"

BY FRANK C. PELLETT.

IN preparing this series for the American Bee Journal no effort will be made to consider the honey-plants in any particular botanical order. Rather will they be grouped as to colors and seasons of blooming. In fact, no great importance is attached to the printed matter in connection with these pictures. It is the special design to obtain a series of photographs that will enable the beekeeper to recognize the principal plants that contribute to his honey crop or supply pollen at a time when it is of special value. In many cases two or three pictures of each plant will be shown in order to give a near view of flower and leaf and also a view of the whole plant.

CUP PLANT.

During the late summer and fall months there is a variety of coarse weeds with yellow flowers common along roadsides and in waste places that are the source of considerable honey. Of these, golden-rod and wild sunflower are commonly spoken of as honey-plants. There are several others equally valuable where they are sufficiently abundant. The first to be mentioned will be a cup plant (*Silphium perfoliatum*), also commonly called rosin weed. Figure 1 shows the plant and Fig. 2 the flowers. By looking closely at the picture, it will be seen that the stem is square, and that the leaves are grown together at the base, thus making a cup around the stem, from which the name is derived. These plants are abundant on rich lands along streams and sometimes on uplands in the Mississippi valley and eastward. They grow from four to eight feet high, with numerous large yellow flowers, so that where plentiful they furnish considerable pasturage for the bees, who visit them very freely and seem to seek them in preference to more attractive plants of the same season.

GOLDEN-ROD.

The golden-rods are of many species and of wide distribution. They are so well known as honey-plants that little need be said concerning them. Golden-rod (*Solidago*) is an important source of honey in many sections. In Iowa it is seldom mentioned as important excepting for the upper Mississippi river section. The honey is usually thick, and, when ripened, of good quality. The flowers are attractive and are much sought for by many beetles and other insects beside the bees.

PARTRIDGE PEA.

The partridge pea (*Cassia*) is reported as an important source of honey in Georgia and Florida. The photograph shows the common roadside species of the middle West, with blossom, seed pod and leaf. The flowers are of an attractive yellow color of just about the size shown. This plant is very common along sandy roads in Iowa, and at times it may be found for miles at a stretch. While the bees visit it freely when in bloom, the amount of honey stored from this source is seldom noticeable in this State.

This plant is peculiar in that the nectar does not seem to be secreted by the flower proper, but by a gland at the base of the petiole. The season of bloom lasts several weeks in midsummer. As it comes for the most part after the close of the clover harvest, the partridge pea in the northern States serves mostly to keep the bees occupied until later flowers bloom in sufficient quantity to make a real honey flow. The quality of honey stored from this source is said to be poor.

Atlantic, Iowa.

[*To be continued.*]

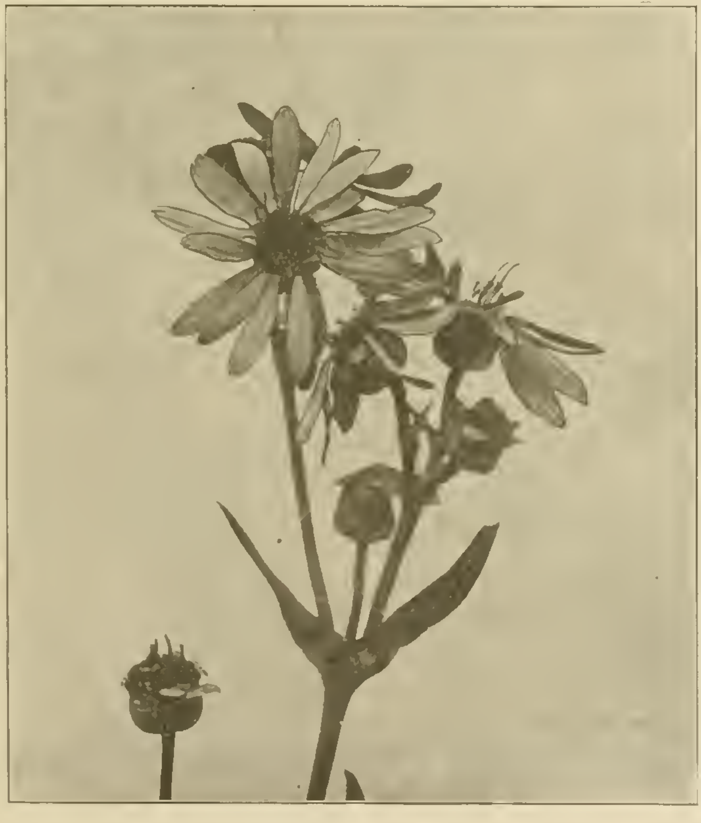


FIG. 2.—FLOWER OF CUP PLANT

Report of the Secretary of the Ontario Beekeepers' Association for 1914

BY MORLEY PETTIT.

THE following report from the Secretary and Apiary Inspector of the Ontario Beekeepers' Association will be of interest to our readers. Ontario is leading in many agricultural pursuits:—EDITOR.

The total number of memberships in the Ontario Beekeepers' Association received during the year ending Oct. 31, 1914, is 1284, compared with 1404 last year.

Four hundred and sixty-nine of these members came in from 26 affiliated county associations and the balance of 815 by single subscriptions.

The fact that only 120 members have fallen away in this year of hard times and crop failure is encouraging, especially in view of the 875 increase a year ago. All those new members would not renew at the end of the first year for reasons of sentiment, but because they are getting their money's worth.

The queen order business was continued during the year. Two hundred and forty-seven members purchased 2143 queens at an average price of about 70 cents each. This will be continued next year.

The war situation in August brought on a serious menace to the beekeeping industry in Canada, owing to the difficulty of securing sugar for winter feeding. The secretary sent a letter to the members of the association advising them to communicate with their representatives in the Dominion Legislature, urging some special provision for beekeepers under the circumstances. The subject was debated in the House, and was referred to Sir Geo. E. Foster, Minister of Trade & Commerce, who wrote to the secretary asking for a statement of the beekeepers' needs. A second letter was then sent out to the members and about 100 replied, stating

FIG. 3.—GOLDEN-ROD

a total requirement of about 48,000 pounds of sugar for winter feeding. The addresses of those making application were sent to Sir Geo. E. Foster with a statement of their requirements. He very kindly sent these lists on to the sugar refiners, who in turn sent them to their local agents throughout Ontario, instructing them to see that bonafide beekeepers were supplied with plenty of sugar at wholesale rates.

Acting as Provincial Apiarist, the secretary took a spring report on beekeeping, sending blank forms to a large number of Ontario beekeepers the latter part of April. One thousand one hundred and fifty replies were received, reporting 38,222 colonies, spring count. The average winter loss was only 7½ percent, and prospects for a honey crop very bright. The reports taken later, however, showed almost a total failure of the honey crop.

APIARY INSPECTION AND DEMONSTRATION.

It has not been found necessary to make much change in the management of the inspection of apiaries from the methods reported at previous conventions. In accordance with a resolution passed at the last annual convention, more local inspectors were appointed than ever before, but with this exception the work has been carried on much as usual.

The Inspector's Conference was held at the Beekeeping Short Course in January at the Ontario Agricultural College. A letter warning against danger of spreading disease by allowing bees to rob was sent to the general list of beekeepers early in the spring, and the self-inspection report forms went to the disease list of beekeepers in May. These were given a hearty response by the recipients.

Twenty-one apiary inspectors were employed. Nine of these were strictly local inspectors; that is, they are practical beekeepers appointed to inspect bees in their own and adjoining counties. Eight have taken some training at the Ontario Agricultual College, and have returned to their homes to keep bees. They also acted as local inspectors. The remaining four men were sent out directly from the Ontario Agricultural College, after having received a special course of training in apiary inspection and in conducting apiary demonstrations.

One thousand three hundred and sixteen visits were made to apiaries by inspectors during the season of 1914, and while in the European foul brood district 50 percent of the apiaries visited were found diseased, only 31 percent of the apiaries visited in the American foul brood district were found to be in this condition. In other words, whereas the inspectors only went to apiaries where disease had been reported or was strongly suspected, seven out of ten such apiaries in the American foul brood district were found to be free of disease. This shows that the educational campaign which we have been conducting for several years is bearing good fruit.

While it is exceedingly regrettable it is not surprising that European foul brood is still spreading rapidly. Some

FIG. 4.—PARTRIDGE PEA

new counties have been taken into the diseased area this year. It is only a matter of time until the whole province is covered. Nothing but careful requeening with vigorous stock and advanced methods of management will save any apiary in Ontario from ultimate destruction. By our publications, demonstrations and inspectors, practically every beekeeper of Ontario has been repeatedly warned, yet comparatively few have taken heed, or will heed until the enemy is upon them, and they have suffered heavy loss. In the infected areas the business has been reduced to the very few who have taken advice and are building up their apiaries again to a paying basis. These few are proving the truth of what has been said and their evidence is of great value in the educational campaign still being waged in advance of the disease.

No doubt one reason for the indifference to warnings in the European foul brood counties is the fact that previously no bee-disease had been known there. It is only this year that the American and European foul brood territory begins to overlap—in Victoria county. From now on we can expect an increasing number of cases of the two diseases in one and the same colony. This will no doubt make it necessary to treat all such colonies by requeening for European foul brood, and by shaking for the American variety of disease.

Fifty-five apiary demonstrations were held in all parts of Ontario, with a total attendance of 1861 persons. In 1912, the average attendance was 25, in 1913 it was 32, and this year 34, showing an increased interest from year to year.

This report would not be complete without mention being made of the public spiritedness and the hospitality of several who have given their assistance. Fifty-five beekeepers have at considerable inconvenience allowed their apiaries to be used for demonstrations. In many cases their wives and other ladies of the neighborhood have provided refreshments for the demonstrators and for the beekeepers in attendance. Hundreds of other beekeepers have given a hearty welcome and cordial hospitality to the inspectors on their rounds. All this is very much appreciated both by the inspectors and by the department, and goes a long way towards smoothing the path of the public servant which is not always lined with roses.

Guelph, Ont.

The Life of a Bee Inspector, Teaching Apiculture—Does it Pay?

BY F. DUNDAS TODD.

THERE is a new gospel abroad in the world today, it is old, and thus ever new, and the sound of its advance has become ever louder in the past few years. It is the gospel of the welfare of the worker. Ever hear of it before? If not, read the first four books of the New Testament, thinking not of spiritual matters as you are generally supposed to do, but thinking in terms of food, clothing and shelter, and you will find there the same dominant note that is sounding today all over Christendom. Then get at the story of the labor unions of the Greek and Roman Empires, when you will discover not merely a note but a pronounced roar. You will comprehend why the Christian movement spread so rapidly over the civilized world, and why it was the one religion hated by the Roman authorities, whose proudest boast was that all faiths looked alike to them.

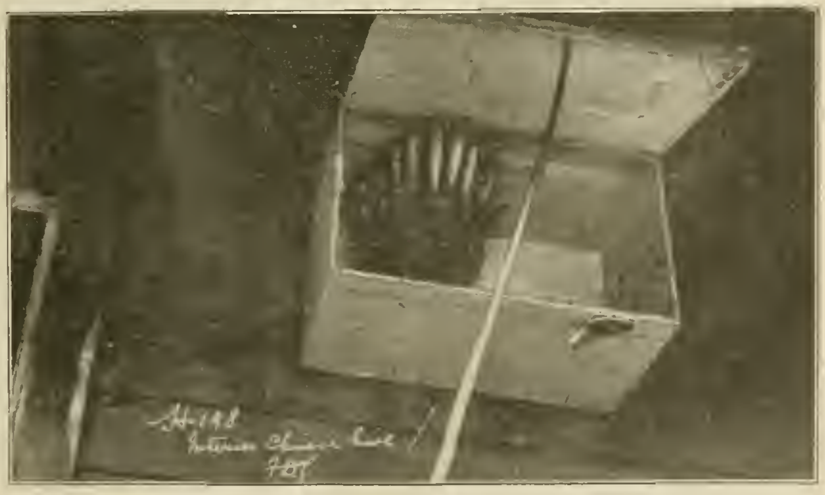
Once again the cry is with us, the welfare of the worker. The employers demand a better training for him, that he may be more efficient, and so earn more profits. The worker himself is anxious for higher skill that he may earn better wages. In that classical land of the origin and development of our modern industrial system, Great Britain, the worker has expressed in plain and simple language that he must receive a decent and certain living in exchange for his services, or he will not work.

Even in British Columbia, young in years and sparse in population, we feel the rising of the new tide and are hastening to move on the crest of the wave. Our resources are agriculture, timber, mining and fisheries. The first is receiving the greatest educational attention just at present because we have so many on the soil that were trained to other occupations, and do need to be guided into proper methods. The teaching of apiculture is a new departure, and originally was undertaken as a side line, the idea being to safeguard the interests of the fruit men who naturally had to depend upon the bee for the certain pollination of the fruit blossoms. The chief of the Department of Agriculture appreciated fully how wide reaching are the effects of an outbreak of foulbrood, and decided that an ounce of protection was worth many pounds of cure. His action was happily timed, for in response to a preliminary circular sent out to the 100 beekeepers whose names had been secured by the writer, a suspicious case was reported, which, on investigation, proved to be foulbrood, imported from Ontario a few months before. It was wiped out before the infection had spread.

The province has not the power to prohibit the importation of bees into its bounds, but it puts into quarantine for nine months at the point of entry all bees that arrive in combs or in regular hives. Since the passing of the Foulbrood Act no settler has cared to chance his bees being left on the boundary line of the province, possibly on a mountain peak a few thousand feet above sea level, and the foulbrood inspectors are just as well satisfied. There are bees in plenty in the settled parts of British Columbia; in fact, the woods are literally full of them, so any bee hunter can have all the sport he wants within a mile or two of most towns, for nearly every dead cedar holds a colony.

Much of our river bottom land has been divided into five and ten acre lots on which intensive farming is being developed. Beekeeping has been attempted as a side line by many, but not profitably for the simple reason that the beekeepers were ignorant of the rudiments of the art. I find many of them own a standard book on beekeeping, but these are so all-inclusive that they tangle almost every one into a hopeless mess. Again and again I have had to ask the better half of the family to hide the book for a couple of years to prevent the enthusiast experimenting with every trick inside its covers, all at once. I find it far better to teach the average man at first just what is indispensable, and not one jot more. Once he gets a crop and gets confidence in himself it is surprising how rapidly he advances.

Can a bee instructor earn his salt in salt, otherwise can he earn his money in honey? If he cannot his existence is not justified in these highly utilitarian days. Let us see. When I enter a bee yard for the first time my first task is to learn its efficiency. Pulling out my note book I want to know how many hives were on the stand in April of the previous year, and what amount of honey was taken off the hives at the end of the season. Once I am through with a district I make up a statistical



CHINESE HIVE—(To view properly, hold about one foot above level of eyes.

statement for the department records after this fashion:

	April, 1912 colonies	Crop, 1912 pounds	Average pounds	Beekeepers 1913
Delta......	506	16,506	31	78

This data gives us a starting point for all future comparisons, while the inspector's note book keeps tab on the individuals. Many times in the course of the season the note book is pushed under the eyes of a doubting Thomas to spur him into a little activity.

At the beginning of the season, before steady inspection work is started, I spend a day in each locality to hold a demonstration meeting chiefly to nurse whatever enthusiasm has been aroused. On the occasion of that visit I learn as much as I can about the preceding summer's crop, but in the short time available it is utterly impossible to get complete returns. But I credit no apiary unless I get a definite report, so the figures entered for a district are decidedly under the actual. Another point must be remembered, the nearer to the honey flow the instruction was given the less chance there is of any improvement being evident in that season's crop.

On referring to my note book I find the districts I visited for the first time in 1911 and 1912 increased their honey production from 4500 pounds in the year preceding my visit to 16,733 pounds in 1912, a gain of 12,233 pounds, fairly attributable I think to my efforts. To this amount should be added the gain made in 1911, which amounted to 4000 pounds, a total of 16,233 pounds. The real gain is decidedly more, for the apiaries not reporting are not credited with a single pound; not even the amount they secured before my work began. The figures, therefore, are very conservative.

The beekeeper can sell to a wholesaler in Vancouver his whole crop at 12½ cents a pound, and the buyer will furnish the cans. But as a matter of fact three-fourths of the crop was sold locally at prices round about 20 cents a pound. A very fair average would therefore be 15 cents a pound, which works out a $2434 gain. This sum easily pays all my services cost the Government in the two years. From now on the capital invested through the Department of Agriculture should pay returns of more than 100 percent annually to the farmer. It certainly pays to look after the welfare of the worker.

A SYSTEM OF BEE INSTRUCTION.

For over 40 years I have been engaged in teaching either directly or indirectly. The longer I teach the more perplexing I find one problem, to express myself in language that the one being taught can fit into his mental experiences. Once I can comprehend the other fellow's mental attitude the task is easy. Let us take the farmer with a few colonies of bees. Bees are really a form of stock, but he usually does not see it that way. Cattle, sheep, horses, pigs and chickens have to be cared for every day, but since the bees need only occasional attention they as a rule get none. If every day they had to be fed, watered, their quarters cleaned and bedding given, there would be very few poor beekeepers. But unluckily for them the bees attend to the sanitation of the hive. the food supply and the carrying in of the water, hence are supposed to need no care.

During my first season I tried to interest the farmers, and while I felt I was making some impression I knew I was not clinching as I would like. My mental attitude did not harmonize with theirs. In my second year I developed the idea that bees were just a form of stock, and required to be cared for like any other animals on the farm. I felt I was getting near, but not next. At the beginning of the third season a happy idea struck me, and now I had the farmer really interested.

Bees are a form of stock, and as you know, when you want something to eat from stock you must stop the next generation. If you eat the eggs, there will be no chickens; if you want milk you kill the calf; when you eat the cow there can be no more young. That argument they could follow, it fitted in with their daily experience. Then comes the clincher, to get honey you must stop the swarm, which is the next generation of bees. Now we are fairly on the rails and the running is easy. "But how can we prevent swarming?" I always thought swarms were good things to have; now I see why I get no honey." Out of my pocket I pull my model bee hives—please do not tell everybody, but they are cigarette boxes—and begin to do a little juggling with them. Although the orthodox way in schools, most teachers know that the ear is not by any means the best way of access to the brain; the eye is far superior, better still to use both of these senses.

So I place a box on the table if we happen to be in a room, or as generally happens, on a step of a porch, and call that the hive on the winter stand. Then I briefly tell the story of the spring-building up season, or the rapid increase in population, and especially how in the month of May a first-class queen will keep about a dozen frames full of brood. But there are only eight frames in his hive, the queen rarely lays in the outside frames, so when the other six are all packed with brood, what is going to happen? In addition I remind him of the need of fresh air. There are probably a hundred thousand living things in the hive all needing fresh air every minute, and how all the air that enters the hive must come through the entrance. He is giving considerable attention to the ventilation of his barns, but neglects his bees. Just think how they must suffer when all the air they consume must come through an aperture 3x⅜ inches.

When the queen needs more room to lay and cannot find empty cells in the hive, what will the bees do? Why, probably swarm. When the bees are sweltering on account of the heat and poor ventilation, what is the most natural thing in the world to do? Go somewhere else of course. You do not need to tell him, he answers every time. Well, what should the beekeeper do to keep the bees at home? Give them a second story filled with brood combs. So here I put the second box on top of the first, and tell him this is how his hives ought to look on the first day of May. And if the bees need more fresh air, and the need for it is best shown by their hanging out at night, just enlarge the entrance. If no other way is possible tilt up the front of the hive and slip bits of stick about ⅜-inch thick under the ends of the front. Here I slip in bits of matches under the bottom box,

Now we are all right until the honey flow comes, with mighty little chance of swarming. Clover blooms in the lower Fraser valley about the end of May, but the bees do not ordinarily work on it until more than a month later, so I am safe in fixing the longest day, June 21, as the date on which to put on the third story to catch the sur-

CONVENTION GROUP AT THE ILLINOIS MEETING AT SPRINGFIELD plus honey. Here I add the third box to the pile.

At this stage of the game the farmer usually gets hold of the boxes and repeats the lesson to see if he has gotten it right. Then I get his note book or sheet of paper and write out for him a calendar for a year's work in his apiary, cutting everything down to the least possible effort. Here it is:

About April 1, on a warm day, clean the bottom-boards.

May 1, put on a second brood-chamber to give the queen room.

June 21, put on a super for the honey flow.

When needed, put on a super for the honey flow.

August 1, in the clover district, extract.

September 1, in the fireweed district, extract.

September 1, see that the bees have six full combs of honey to winter on.

My readers will notice that I do not ask for an examination of frames, for the cutting out of queen-cells or anything of that nature, all of which are supposed to be necessary for successful beekeeping, and so frequently scare the beginner. I merely ask him to add on and then take off. Now, luckily for me, in my territory we have a long building up season. The first pollen is carried in about March 10, and not infrequently it is the beginning of July before the honey flow starts, so we have four months for the bees to get strong in. The system I have planned so far has worked admirably, and practically has stopped all swarming, also it results in 50 or more pounds of honey to the colony. Its simplicity just suits the farmer who is working hard long hours, and some day after the midday meal he will put on the needed story.

Generally speaking, all he wants from his half-dozen colonies is about 50 pounds of honey, just enough for family consumption, so he is apt to be rather startled when he gets the amount from each hive. Somehow he does not realize that it is a farm product to be sold, so he donates his surplus to his neighbors, beaming all the while as he talks of his good luck. It is all so delightfully primitive that I almost hate myself when I butt in and recommend turning the crop into cash.

Victoria, B. C.

CONVENTION PROCEEDINGS

The Iowa State Meeting

The meeting at Ames was less numerously attended than the meeting at Des Moines last year, about 70 to 80 beekeepers being present. This is due evidently to the short crop of 1914. But it was very enthusiastic.

This was my first visit at Ames. I was very much impressed by the magnitude of the institution and the thoroughness of the departments which I visited. The botanist, Dr. Pammel, now well-known to our readers, Prof. Bartholomew and Prof. L. A. Kenoyer, entomologist were all present at the convention and gave conferences on their respective branches. Dr. Pammel is making a special study of the honey-producing plants of Iowa, and Prof. Kenoyer spoke of the different pollen and honey-gathering insects, illustrating his speech with samples of some of the numerous hymenopters that visit flowers.

It is impossible to give mention of all the addresses and discussions. Professor Bartholomew gave a demonstration of the bee, with enlarged illustrations. But this was before my arrival, and I regretted very much not having been present.

Dr. Phillips, of the Washington Bureau of Entomology, spoke at length on the temperature of the cluster in winter and the effect of greater or less moisture in cellar wintering. Professor Gates, of Massachusetts, spoke of the influence of bees on flower fertilization.

Practical demonstrations were made of folding sections and inserting foundation in them. The first was by F. W. Hall, who uses a contrivance of his own somewhat similar to the Rauchfuss fastener. He did speedy work. When Mr. L. D. Leonard, secretary of the Minnesota Association came in his turn to show how to use the split sections and insert the entire sheet of foundation into four sections at once, his method was thought the best. The use of split sections enables the beekeeper to secure the foundation on three sides, and I know by experience that sections filled in this manner are always more compactly filled and less liable to have the comb break out in shipping than any others. This method was originally devised in England. It is used by some noted beekeepers in America, among whom I will name Aaron Coppin, of Illinois, who always has the very finest honey on exhibit at the State Fair.

But when Mr. Pangburn came forward with his method of fastening foundation with a little hand tool, he was thought to have perhaps the quickest way of all.

The foulbrood question was discussed. It is more and more apparent that European foulbrood can best be overcome by the introduction of pure Italian queens.

On queen introduction, J. W. Snyder stated that he was most successful by the cage method. But he first catches the old queen and places her within the hive in the cage intended to be used for the new queen. After a few hours he removes her and puts the new queen in her place, without any attendants. His theory is that the odor of the old queen being left in the cage, the new queen is more likely to be accepted by the mingling of their odors. It is quite plausible.

The election of officers resulted as follows: President, C. E. Bartholomew, of Ames; Vice-President, Mr. Bleasdale: Secretary-Treasurer, S. W. Snyder, Center Point. Directors, W. S. Pangburn, Center Junction; J. W. Stine, Salem; A. P. Chamberlin, Des Moines.

There were present from Minneapolis, P. J. Doll, Dr. L. D. Leonard, already mentioned, and Prof. F. Jager, Professor of Apiculture of the University of Minnesota, who gave very interesting addresses.

State meetings should be better at-

MEMBERS IN ATTENDANCE AT THE IOWA MEETING AT AMES IN DECEMBER tended by the beekeepers at large. There is much information to be gained, and it is well worth the expense of the trip.

Kootenay Beekeepers' Association of British Columbia

A well attended and enthusiastic general meeting of the newly-formed Kootenay Beekeepers' Association, the first beekeepers' association to be organized in British Columbia, was held at the City Hall, Nelson, Nov. 27, for the purpose of electing officers and passing a Constitution and By-laws. The meeting was also a thoroughly representative one, beekeepers from many of the outlying districts of the east and west Kootenays and boundary, the territory covered by the association, being present.

It has been recognized for some time that, in order to stimulate the beekeeping industry and assist beekeepers in disposing of their honey, a system of cooperation had become absolutely necessary. Honey of uniformly good quality and any quantity of it being capable of being produced in this section of the Province, it could not be expected that it would be possible to dispose of it at remunerative prices unless a uniform system of putting it up for market could be provided. The beekeepers have also had considerable difficulty in the past in obtaining bee-supplies, owing to heavy freight rates and other causes, and also to get hives suitable to the climatic requirements of this area. Thousands of fruit trees have been planted all over the territory during the past few years, and for this reason alone the keeping of bees has become more essential. It is hoped, therefore, that the association will be able to accomplish useful work. That the movement is appreciated can be gauged by the fact that nearly half the beekeepers in the territory have already become members and paid the annual subscription of $1.00.

The objects of the association as set forth in the Constitution and By-laws adopted at the meeting are as follows:

W. S. PANGBURN FASTENING FOUNDATION IN SECTIONS

"The objects of the association shall be to promote and encourage the keeping of bees and the most suitable methods for their profitable management.

"To assist members of the association in disposing of their produce to the best advantage by the adoption of uniformity in its 'get up' for market, and the provision of a special distinctive honey label, for the use of members only, which should ultimately tend to be looked upon by the purchaser as a guarantee of excellence and purity.

"To obtain the most advantageous terms for members in the purchase of bee-supplies.

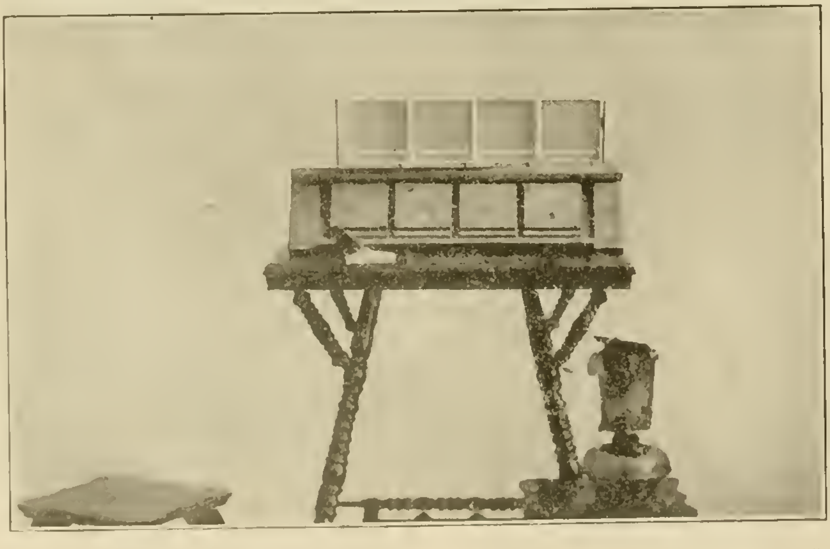
"To promote and regulate local exhibitions of honey and other bee-products, and arrange for the competent judging thereof.

"To advocate the more general growing and cultivation of nectar-yielding trees and plants, such as linden or basswood (*Tilia Americana*), alsike clover (*Trifolium hybridum*), etc.

"To aid in the dissemination of reliable and practical information with regard to the beekeeping industry, and further its progress in every way possible in the interests of the members."

The following officers were unanimously elected for the year ending Sept. 30, 1915:

President, G. Fleming, of Nelson; Vice-Presidents, James Johnstone, of Nelson; and Major-General Lord Aylmer, Queens Bay; Honorary Secretary-Treasurer, W. J. Sheppard, of Nelson; Executive Committee, J. J. Campbell, Willow Point; Mrs. Casler, Nelson; J. Hyslop, Nelson; C. G. Johnson, Nelson; W. H. Rixen, Nelson; W. J. Mohr, Nelson; J. Blinco, Creston; B. Lockwood, Fruitvale; E. Alpaugh, Kaslo; R. E. Plewman, Rossland; J. H. Vestrup, Nakusp; H. W. Collins, Grand Forks; H. G. Slater, Robson; T. S. Gill, Cranbrook; G. F. Attree, Queens Bay; Auditor, J. D. Kerr, Longbeach.



THE FASTENER EXHIBITED BY MR. PANGBURN AT THE AMES MEETING

The Illinois Meeting

President E. J. Baxter called the Illinois State convention to order on Nov. 19. He called the attention of the members to the fact that this association is affiliated to the National, and asked for an expression of policy to be pursued. After an animated discussion it was voted to continue the affiliation, and Pres. Baxter was elected a delegate, with instructions to use his best judgment in helping form the policy of the National Association.

Sweet clover was the subject of an excellent essay by Prof. J. G. Mosier, Chief of Soil Physics of the University of Illinios. This is considered of such value that it is given in full in the American Bee Journal.

Lively discussions followed the paper, given by N. E. France, of Platteville, Wis. Many of the "short cuts" which he uses, and which have already been mentioned in the Bee Journal, have been accepted by practical beekeepers and proved of interest to all, especially to the beginners.

Fighting European foulbrood in the Koch apiary, by the Dadants, given by H. C. Dadant, brought out a discussion of methods of handling this disease. In 1913, the year previous to the appearance of the disease, this apiary was composed of vigorous colonies, mostly hybrids, located 10 miles from the home apiary. European foulbrood, thus far entirely unknown in that part of the State, sprung up suddenly there. In spite of its showing among more than half of the colonies of that apiary by June 10, it was practically eradicated during the dry season. A complete record was kept of the treatments, and this material will be given in the columns of the American Bee Journal for 1915.

The experience showed beyond doubt that the Italian bees are great fighters of the disease, all strong Italian colonies being affected very little, even with bad cases in the apiary and when no crop was on. Those present who had experience with the disease, stated that it may reappear in weak colonies or those not of pure Italian stock. The old advice, "Keep your colonies strong," cannot be too much emphasized.

Dr. E. F. Phillips addressed the convention on "Temperature and Moisture of the Hive in Winter." The bee-keepers hardly realize what extensive investigations have been undertaken by the Department of Apiculture at Washington, on bees in winter quarters. A report of more than three months, during the middle of winter, was kept, with readings made every 15 minutes day and night, of the temperature of the cluster as well as of other parts of the hive and the outside air. Such extensive experiments are of course impossible to the average beekeeper, and the Department will bring to light many important points as the experiments are continued. Bulletin No. 93, which has been mentioned in the American Bee Journal for May, page 188, gives more details upon this subject than may be given here.

Report of the busy State Inspector of Apiaries, A. L. Kildow, showed much progress in the campaign for the education of the beekeepers on diseases, by field meets during the year. With the State fund available, a large territory was covered this year, as will be shown in his report to be published in early spring. Due notice of this will be given in time. Forty counties out of 48 visited were found with disease. His work and that of his deputies was made difficult by the drouth which affected much of Illinois this year. Mr. Kildow deserves praise for his efforts to help uplift bee-culture in Illinois.

The presence of Dr. Burton N. Gates, president of the National Association, was much enjoyed, and his lantern slide lecture at the evening session was very instructive. There were many beginners present to whom this number of the program proved of great value. Mr. Gates spoke of the bee's importance in the fertilization of flowers. Bees have proven absolutely necessary in large green-houses to fertilize the cucumbers now grown in great numbers, during the winter, under glass. One establishment of some 40 acres uses from 80 to 100 colonies for this purpose every year.

In response to the call for prize essays, three were read, two of them being by ladies. A vote taken awarded the prizes as follows: 1st Mrs. A. L. Kildow; 2d, Mrs. H. L. King; 3d, Louis Werner. The first of these, by the wife of the foulbrood inspector, will be printed in the American Bee Journal.

The following were elected officers for the ensuing year: President, E. J Baxter; Secretary, Jas. A. Stone, Rt. 4 Springfield, Ill.; Treasurer, Chas. Becker; 1st Vice-President, W. B. Moore.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Danzenbaker Hive for Nuclei—The Miller Cage

1. Would a Danzenbaker hive answer as well as a Langstroth for a nucleus hive? I use the Danzenbaker altogether. I thought I would use three frames in each compartment and cut a hole ½x2 inches in the bottom part of the hive for the middle, as the frames are closed-end frames, and I cannot put the entrance anywhere else. The outer compartments will be the same as described in "Fifty Years Among the Bees."

2. Would not a block 1¼ inches square with a ⅜-inch hole bored in the center answer as well as if I used two pieces ¼x½, a piece of tin and a piece of section each ¼-inch square? This is for a Miller cage.

3. "Fifty Years Among the Bees" is the best book that I have read, having read other well recognized books on bee-culture. It tells the beginner as well as the veteran how, when and where in plain language. A man keeping bees could hardly invest a dollar to better advantage than to buy one of these books.

I think I would like the No. 2 Miller cage better than the No. 3 as it is stronger for cells or introduction. INDIANA.

ANSWERS.—1. Yes, if you are using the Danzenbaker hive, use it for nuclei also.

2. It would answer just as well, except that it would take up too much room to be put between two combs.

3. I'm glad you like "Fifty Years."

The special advantage of the No. 3 cage is that it can be left for any time desired with the bees without allowing them to get into it, and then in an instant be changed so the bees can get at the candy.

Breeding from a Prolific Queen

This year we had only one colony out of nine that stored any surplus honey; they were Italians in an 8-frame hive. Next year we would like to make some increase from this colony, as we have plenty of extra combs and hives.

1. About swarming time if I remove the queen from this colony, in a few days there will likely be a good many queen-cells started. Now, if there happens to be cells on each frame could I make eight nuclei from it by taking one frame of bees and then take a frame of hatching brood and bees from some other hive, and perhaps a frame of honey, and fill up the hive with drawn combs?

2. If I remove the queen from one of my black colonies and put in one of those frames with queen-cell on it, would the queen-cell need to be protected from the bees for a few days?

3. If I make these nuclei, say in June, would they be likely to build up into full colonies in an ordinary year?

4. This fall we doubled up a few colonies by putting the weaker colony on top and a sheet of newspaper between; when I took the frames out of this top hive to hang them in the basement for the winter, I found dead brood in them. I thought perhaps this brood was not properly taken care of by the bees. There was no smell, the brood was not ropy, and the unsealed brood was coffee colored, while the sealed was white and thin

5. How should dead brood look when not diseased? ILLINOIS.

ANSWERS.—1. Yes, your scheme will work. If the cells should happen to be all on one or two combs, you can cut out a cell and fasten it on another comb by pinning over it a hive-staple. When you take the extra frame of brood and bees from some other colony, shake into your nucleus the bees from one or two more of the frames, since a good many will return to their old home. Or, to prevent returning, you may fasten the bees in the nucleus for two or three days.

2. Yes, if the cell is not protected and is given before the bees have discovered their queenlessness, it will be torn down. But in 24 hours they are likely to discover their queenlessness.

3. Yes, if it is not too late in June, and you give a pretty good force of bees.

4. Like enough the few bees deserted the brood and went below, leaving the brood above to starve.

5. Dead brood looks like—like—like brood which has died. I hardly know how to say it is different from diseased dead brood, unless it be that it looks more dried up.

Swarm Control—Getting a Strain Which Does Not Rob

1. In the American Bee Journal for November, page 385, the plan given by J. E. Hand on swarm control and the increase problem looks possible, and I would like to have your opinion of it. I note he uses 16-frame hives. Do you think the plan will work with the 10-frame hive. He says take six frames from each colony at the close of the basswood harvest and give them to the nuclei. But that will not be necessary as I can build a 2-frame nucleus into a full colony by winter.

2. Is it necessary to wait until each colony has made preparations to swarm or can it be done just before the swarming season?

3 This last summer after the honey flow was over I noticed a lot of robber bees prowling around, and every now and then one would manage to slip in past the guards and steal a load of honey. Finally they overpowered one and came very near robbing it out before I got them stopped, and I got them perfectly quiet at one time and contracted the entrances to all the colonies. In a few days there came a litle rain and after it cleared up they started to prowling around again and kept it up until cold weather, but they were worse after a rain or damp spell than at any other time. Is that their natural way of doing or should they keep quiet during a dearth of honey, and would it have resulted in a general case of robbing if I hadn't contracted the entrance?

4. I have read in the bee journals about people getting hold of bees that seemed determined to rob, and if any of them are that way probably I have gotten some of that stock I would be glad if you can tell me where I can get a stock that is not inclined to rob? VIRGINIA.

ANSWERS.—1. As a rule it is not well to attempt any changes on any plan given, but to follow out exactly instructions. A plan that succeeds with 16 frames might be an utter failure with a less number.

2. When colonies in general are making preparations for swarming, it will usually be all right to operate at that time upon

other colonies that have made no such preparations, provided they are strong; for some colonies make no preparation for swarming throughout the entire season.

3. It is a common thing for bees to prowl about and try all crevices of hives at any time when flight has been stopped, and after a rain, and it is quite possible that your narrowing the entrances may have prevented a bad case of robbing.

4. It is possible that there may be a strain of bees naturally given to robbing; yet you will find that all bees are inclined that way when opportunity offers at a time when nothing is to be had in the field. Please understand that bees have no morals, and when they can't get honey from the fields it seems entirely honest to get it from some other hive if they can, and you will probably find that the better they are at gathering from the field the better they are at robbing if they turn in that direction. When robbing occurs, it is not generally because the bees are such bad robbers, but because the beekeeper has done some fool thing to expose a weak colony and start robbing. Keep colonies always strong and avoid the start. Bees that have once engaged in robbing are the more inclined to begin another time, but it is not true to say of them, "Once a robber always a robber."

Fastening an Extractor

Please tell how to fasten down the honey extractor, where a person extracts honey by hand It seems to me extractors ought to be made at the bottom something like large coffee mills, so they could be bolted down to the floor. MINNESOTA.

ANSWER.—They *are* made to fasten down to the floor; at least some of them are. There are two handles to the extractor, one at each side toward the top. A strong hook is fastened into the floor at each side, with iron rods extending from hook to handle, arranged with screws so that they can be screwed up tight, the same as a bucksaw. Even with this, a jiggling motion will sometimes start, increasing in violence until it seems things would shake to pieces. The important thing is to have the extractor fastened so solidly that there cannot be the least chance for vibration to *begin*. Some have a 2x4 or other timber across one corner of the room, resting on top of one edge of the extractor. Less in the way, and perhaps equally satisfactory, is the plan of fastening the top of the extractor to the wall. If the top does not stand so close to the wall as to touch, nail a block or board upon the wall to make it so. Then nail on other blocks, one of them projecting down an inch or so into the extractor, or else drive a spike and bend it over, so that the extractor shall be held solidly to the wall.

[As much as possible avoid putting combs of very unequal weight in the baskets.—C. P. D.]

Feeding Syrup—Robbing, Etc.

1. I made some candy and put it in frames and placed them in the hives. A few days later I found much of it scattered on the bottom-board. (I must have overcooked the candy.) I then took out the frames and gave them two to one syrup instead. Now, can I make a syrup out of that candy, either two to one for winter feeding or half and half for stimulative feeding without injuring the bees?

2. How can one tell when there is honey-dew?

3. When I take a frame out of the hive the bees start to fill themselves with honey. Do they replace that honey in the cells when the hive is closed or do they retain it in their stomachs? A bee-man here told me that they digest it, but it is hard to believe.

4. I found one colony with about 100 bees and the queen. Two weeks before it was quite strong, when I gave it one quart of two to one syrup and one frame of candy. I caged the queen, but she was so weak she died in a few hours. Some of the candy was eaten, the syrup disappeared, and what little was left of it granulated on the bottom of the Alexander feeder. There were more yellow jackets in the hive than bees. Do you think the yellow jackets overpowered the bees? The bees were hybrids.

5. Is buckeye honey bad for bees?

6. In making syrup two to one in boiling water, after it is thoroughly mixed, is it necessary to put it on the stove to let it come to a boil? CALIFORNIA.

ANSWERS.—1. If the candy has not been scorched, it can be used the same as sugar for any syrup. If it has been scorched, it cannot be used for winter food, but may be used at any time when bees have daily flights.

2. I don't believe I can tell you in words how you can decide as to honey-dew. I couldn't tell in words just how an orange tastes. The dark color of honey-dew and peculiar taste help to decide, but I can't tell what that taste is. If you know the bees are working on some tree where there are no flowers, you may be suspicious.

3. Both. That is, they return it to the cells except what they need at the time for their own use, which latter they would take from the cells anyhow.

4. I don't know Like enough the yellow jackets merely came in at the last.

5. I think I never heard it was.

6. All that's needed is to dissolve the sugar, even if in cold water.

Putting On a Second Hive Body in Spring

1. In adding a second hive body in the spring, when is the right time to give the extra room for a fairly strong colony in a normal season? I didn't get a clear idea about this from "Fifty Years." Are you governed by the quantity of brood and the need for more cells for eggs or by conditions of weather and bloom? I imagine your climate is about like that around Chicago.

2. Would there likely be danger from chill if the new hive body, with several combs of honey, were put underneath the old one, say at the first warm spell about April 10, when the hives are gone over to supply stores where needed? My hives are in pairs, well protected with wooden cases and about six inches of leaves all around. These I intend to leave on until the middle of May, and it occurred to me that the colonies, shielded in that way from the cold winds in April, and having considerable dandelion, willow and fruit bloom to work on early, might be helped in their building up by having their need of space anticipated somewhat. They are 10-frame Danzenbaker hives. ILLINOIS.

ANSWERS.—1. I am afraid you missed one paragraph in the book mentioned. That paragraph reads thus:

"When a colony is beginning to be crowded and there are no colonies needing help, and sometimes even when others do need help, a second story is given. This second story is given below. Putting an empty story below does not cool off the bees like putting one above. The bees move down as fast as they need the room. Indeed, this second story is often given long before it is needed, and sometimes two empty stories are given, for it is a nice thing to have the combs in the care of the bees.."

From this we deduce the answers:

1. The right time to give a second hive body is "when a colony is beginning to be crowded." No matter about the bloom, the weather or the almanac. When all the combs in that one story are occupied, then it "is beginning to be crowded" and should have more room. It doesn't matter whether the combs are filled with brood, honey, pollen, or what, when, as said, there is need for more cells for eggs, then give the additional room by way of another story.

2. No, no damage is likely to occur from putting a second story below before it is needed; for "indeed this second story is often given long before it is needed," and "putting an empty story below does not cool off the bees like putting one above." There is a possibility that as the day warms up the bees will be a little slower about starting out than where they are nearer the entrance; but there is the advantage that when a cold wind blows directly into the entrance it will not have so much effect on the bees farther from the entrance.

Large Hives

1. I see in the American Bee Journal quite a discussion on the subject of large hives. My bees are in 8-frame hives! Do you think they would do better in larger hives?

2. What size would you recommend as better?

3 Would changing them into 10-frame or larger hives in the spring keep them from swarming for that season?

4. Where could I get information concerning the construction of larger hives than the 10-frame? KANSAS.

ANSWERS.—1. I don't know, but it is quite possible that they would.

2. If you are running for extracted honey, certainly nothing less than 10 Langstroth frames should be used, and some good beekeepers still prefer a larger hive, either by having more frames or larger frames. Even for section honey the general preference seems to be for the 10-frame hive. To be sure some get good results with 8-frame hives, but it is a question if they might not have as good or better results with larger hives. Larger hives would take less trouble, and they have the great advantage that there is much less danger of starvation in winter and spring.

3. No; although there would be less tendency to swarming.

4. I don't know just where you would find such information, but it is a very simple matter. All you have to do is to add 1⅜ inches to the width of hive body, cover, and bottom-board, for each frame you add. Most supply dealers will make you prices and give Information regarding 12-frame Langstroth and other large hives.

Removal of Queen in Making a Nucleus

In "A B C of Bee Culture" W. W. Somerford says, "in making a 'nucleus' to remove the queen or cage her." Now, I want to know where the queen is put after caging her? Is the cage left in her own hive, supplied with food and attendants, or is the cage placed in another hive during the interval until the bees start queen-cells on the brood? COLORADO.

ANSWER.—In the latest edition of the book mentioned your question is answered by the following paragraph:

"In the first paragraph, Mr. Somerford mentions removing or caging the queen. We should, perhaps, explain that usually any queen can be caged in her own hive for weeks at a time, and her bees will take care of her through the wire-cloth. If a queen is removed entirely it is implied that she is to be caged in another hive or introduced. Some may, however, be put in a cage supplied with queen-cage candy, and kept for a week or ten days in a warm room. But there would be danger of losing her, as she might die, because, under artificial conditions, she cannot get the "balanced rations' that she needs to keep up her bodily functions."

You see that no food is needed in the cage so long as the queen is left with her own bees; nor are there any attendants in the cage unless the cage is kept out of any hive. It may be well to add that if you cage the queen in her own hive you will not be so sure to have queen-cells started as if you remove the queen entirely.

REPORTS AND EXPERIENCES

Not Discouraged

The past season was a poor one for bees in this locality, but colonies with good queens secured enough for winter. We are not discouraged, but feel there is something better in store for us next next year.

GROVER E. MOORE.

Decatur, Ill., Nov, 16.

Some Loss from Cold Spell

We have had another dry season this year, and honey is short, averaging about 25 pounds to the colony. It was dry up to July. We had a few rains then until watermelons came

I had 18 swarms, which makes me 44 colonies. We had a cold spell of weather a few days ago, and there was at least a handful of dead bees at the entrance of the hives.

Athens, Tenn., Nov. 28. I. W. CARTER.

Cessation of Laying in Queens

I write not as a "know it all," but as one who observes what bees do. "What Determines the Cessation of Laying by the Queen?" on page 404 of the December issue, there are a number of causes. The main ones are the stoppage of nectar, and frost. The worker bees control the laying of the queens. This fall I found the most brood in mating hives on Sept. 26. Why? Because the bees seemed to know that their wintering depended largely upon numbers, the young queens in full strong colonies had entirely stopped laying, and several had no brood in any state; these last had no room to place eggs, as the bees had placed honey in the brood-nest. I had some bees where the flow lasts to Oct. 20, and the same state of "no brood" was there Sept. 30. The bees had filled to the bottom-board. These bees will have to depend upon the queens to start early brood-nests to meet spring troubles, and they will, too, as the bees with lots of stores and some young bees build up fast after Feb. 20.

I am sure the bees reason more than we think they do. They have an intelligent mode of talking to each other, and if such is the case, where does their knowledge end? Far beyond our limited knowledge of them. One of the hardest thing I have to do is to kill a poor little queen, no matter for what cause.

GEO. M. STEELE.

Philadelphia, Pa., Dec. 4.

Good Prospects

Prospects for early honey in my locality are very promising. Honey plants are up in great numbers, and the ground is thoroughly soaked. I hived several swarms the first days of this month. We have had no frost yet, and still have bloom for bees. Our fall honey was fine, but short in quantity. Bees are in fine shape for the winter, which is but 35 or 40 days in length here. The lemons are in bloom now and will soon be loaded with fruit

GRANT ANDERSON.

San Benito, Tex., Dec. 12.

Did Well in North Carolina

Bees did fairly well this year. I secured about 3000 pounds of fine honey from 50 colonies, and increased to 80. All went into winter quarters in fine shape.

Mart, N. C. A. J. McBRIDE.

Beekeeping a Side Issue

Beekeeping is a side issue with me; however, I have not failed to get some surplus honey each year since I have had my bees.

Last year was our best year here. From six colonies and a July 4 swarm, I harvested 700 sections. The bees commenced storing surplus from the fruit bloom, and it hardly stopped the entire season.

This year I secured 150 sections from five colonies; about one fourth of it was from fruit bloom, and the remainder was gathered in September, both kinds being thick and of a rich flavor.

White clover was a complete failure here, and there was only enough sweet clover and catnip to keep the bees through the summer.

A. L. CLAY.

Newman, Ill., Dec. 15.

Alabama Report

I hived a strong swarm on Oct. 12. I put the same on drawn combs and some on full combs with honey, and one week after hiving, the queen had laid several patches of eggs and the bees had straightened up their winter quarters very nicely. We have had very nice weather all fall, and had the first frost on Oct. 27, 15 days later than last year. The bees go into winter much stronger than last year, but much lighter in stores. All indications are for a mild winter, and that means watching them towards spring, for some will need feeding then.

Huntsville, Ala. P. J. FHULLEN.

From a Missouri Legislator

MR. C. P. DADANT, Hamilton, Ill

Dear Sir:—Noticing your portrait in the Iowa Homestead of Nov. 12, it stirred up recollections of long ago. In the year 1869 or 70, I purchased 8 or 10 colonies of Italian bees from your father, who, if my memory serves me, was the pioneer in the scientific handling of the bee industry in that section of the country. I then lived near Burnside, Ill., although my post-office was Carthage.

My father-in-law, now deceased, became my partner in the business. In 1875, I brought my half of the bees, a full carload, to this place, and a year later bought him out, another full car. I think I was the first to introduce Italian bees, honey extractors and comb foundation in this part of Missouri.

REPRESENTATIVE HYSLOP OF MISSOURI.

It might amuse you to know what predicament a careless Scotchman got into and the possibility of serious results that might have obtained.

I once owned a modest fruit farm here, one cow and two horses, the cow a valuable Jersey. I was in the habit of tethering her along the roadside on the best grass spots, with an old-fashioned army picket line and pin, such as I had used in the service, leading up on the outside of my front yard in which were located 135 stands of bees, for a bran mash and a milk mash on my part One June morning, when the bees were almost boiling over I got hold of a newspaper and forgot myself, when old "bossy" should have been released.

Wife exclaimed: "Charley, the bees are killing the cow." I shot out of the door. Between me and the cow was a cloud of bees. Hatless and with a thin calico shirt and overalls, I untied the rope with one hand while with the other I tried to keep the bees out of my eyes and mouth. She was so crazy that she did not notice that she was loose, and I was not sure which was the more dangerous, the swarm or the cow. I finally led her away, got into a buckwheat patch close by, and lying down the bees soon left. I was covered with stings, and thought that I had opened my last colony of bees. But thanks to the fact that all the season and for years I had been subject to their hypodermic injections, I suppose I was immune.

But, excuse me, I only wanted to acknowledge to your family the pleasure I have had from the instructions as well as the purchase. I have just been elected State Representative on the Republican ticket and enclose my card.

CHAS. HYSLOP.

Maryville, Mo.

[Our beekeeping friends in Missouri will retain the name of Mr. Hyslop. He will probably be willing to help them if any Legislation is needed in that State, in the interest of beekeeping.—EDITOR.]

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary.
J. H. M. Cook,
1Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

UNTESTED Queens, 75c each; $7.50 per doz. Nuclei, $1 25 per frame. Bees, $1.50 per pound. Full colonies, 8-frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

QUEENS, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

PHELPS' Golden Italian Bees are hustlers.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $2.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

QUEENS OF QUALITY—I am booking orders for early queens now. Three-banded Italians only. Circular free.
J. I. Banks, Dowelltown, Tenn.

ITALIAN and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.
Grant Anderson, San Benito, Tex.

PLACE your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens.
John W. Pharr,
Berclair, Tex.

TRY my best bright yellow queens. They are beautiful and good honey "getters;" 60c each or $7.00 per dozen. Safe arrival and satisfaction guaranteed.
M. Bates,
Rt. 4, Greenville, Ala.

NOTICE—R. A Shults will sell Italian queens in the season of 1015. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00. Breeders, $5.00. Bred from Moore and Doolittle stock.
R. A. Shults
R. F. D. 3, Cosby, Tenn.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10.
C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

I CAN supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed'
I. N. Bankston, Buffalo, Tex.

CALIFORNIA QUEENS, Nuclei and Bees bred from the best Doolittle stock, ready for shipment at once. Queens, untested, 75c; dozen, $8.00. Tested, $1.25; dozen, $12. Mismated, one year old, 50c; dozen, $5.00. Tested, one year old, 75c; doz., $8.00. Nuclei, 2-frame, $1.50; 3-frame, $2.25; 5-frame, $3.00; 10-frame colony, $4.50. Bees by pound, ½ lb., 75c; one lb., $1 00. Add prices of queens desired to all above prices of bees and nuclei. Delivery guaranteed. No disease.
Spencer Apiaries Co., Nordhoff, Calif.

WHO wishes to know where they can get the best three-banded and Golden Queens to be procured for 1915. Untested, $1.00 each; $4.25 for six; $8 00 per dozen. Tested queens, $1.50 each. Breeders, best, $5.00 each. Bees by the pound, $1.25. Full colonies with untested queen, $5.00 each, f. o. b. Rialto. Can fill your orders for any quantity any time you can use them. If you would like to taste Pure Genuine Orange Blossom Honey, send us $1.50 for a gallon. Prepaid to any U. S. point. Safe arrival and satisfaction on anything we ship.
Rialto Honey Co.,
Rialto, Calif.

HONEY AND BEESWAX

WANTED—No. 1 white comb honey.
Fred Peterson, Alden, Iowa.

WANTED—Comb, extracted honey, and beeswax.
R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Extracted Buckwheat honey in 160-pound kegs.
N. L. Stevens,
Venice Center, N. Y.

CALIFORNIA ORANGE BLOSSOM HONEY, extra fancy, at 9c. Safe arrival guaranteed. Sample free. James McKee, Riverside, Calif.

DELICIOUS and rich white Aster Honey in 60-lb. cans; two cans per case, at 7c f. o, b. Brooksville, Ky. Sample, 10c. H. C. Lee.

FOR SALE—60,000 pounds light extracted honey, well ripened, mild flavor; two 60-lb. cans to case; 7½c per pound; 10-case lots, 7c.
H. G. Quirin, Bellevue, Ohio.

FOR SALE—Spanish needle, Hearts-ease No. 1 light comb, $3.00 per case; Fancy, $3 25; 24 Danz. sec. to case, 6 to 0 cases to carrier. Extracted, 120-lb. cases, 9c per pound.
W. A. Latshaw Co., Carlisle, Ind.

THE BEEKEEPERS' REVIEW is now owned and published by the honey producers themselves It is *the* paper *all* honey producers should support. Eight months' trial subscription, beginning with the May number, for only 50c. Sample copy free. Address, The Beekeepers' Review, Northstar, Mich.

EXTRACTED HONEY—Best Water White and nice Amber Alfalfa in 60-lb., 30-lb., and smaller tins. State quantity you want. Special prices on ton lots or over. Several carloads just in. Dadant & Sons, Hamilton, Ill.

PURE HONEY, California Sage, water white, 120 lbs, 10c a lb. Light amber honey, 120 lbs., 9c a lb. We have honey of several flavors. Price in gallon cans upon request. Sample, 10 cts. each.
I. J. Stringham,
105 Park Place, New York. N. Y.

MISCELLANEOUS

TO EXCHANGE for honey, wax or cash, 12 inch Root foundation mill in perfect condition, $15.
I. J. Stringham,
105 Park Place, New York, N. Y.

NORTHERN grown sweet clover seed direct from the grower. White and yellow biennial hulled, $16.50 per bushel.
W. M. Budlong, Rockford, Ill.

HOW many people are there who really know what good Queen Bees are? We suspect that thousands of beekeepers know, so we claim to know, and can sell good queens to all who wish them. The well known three-bands and Goldens. Untested, $1.00 each; $4.25 for six; $8.00 per dozen. Tested, $1 50 each. Full eight-frame hives with untested queens, $5.00 each. Bees in pound packages, $1 25 f. o. b Riverside. Promptness and honest treatment, and of course satisfaction and safe arrival. Do not return dead queens to us; just state it on a postal, and we will return one at once.
Golden Rule Bee Co., Riverside, Calif.

YOU have been thinking for some time you would like to become a National Beekeepers' Association member. Now is your time; a year's dues to the National and eight months' subscription to our own paper, the Beekeepers' Review, beginning with the May number, both for only a dollar. Address with remittance, The Beekeepers' Review, Northstar Mich.

POULTRY

FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; $1.00 per 15 or $5.00 per hundred. Satisfaction Guaranteed.
W. H. Payne, Hamilton, Ill.

SUPPLIES.

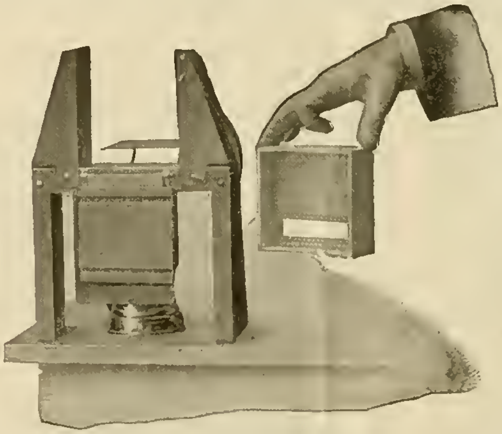
BROTHER BEEKEEPERS, send for my new prices on Supplies. I can save you money. Beeswax wanted.
W. D. Soper,
Jackson, Mich.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap.
White Mfg. Co.,
4Atf Greenville, Tex.

BETTER HIVES FOR LESS MONEY—Beekeepers' supplies and standard-bred Italian bees. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

WOODMAN'S SECTION FIXER

A Combined Section Press and Foundation Fastener of Pressed Steel Construction

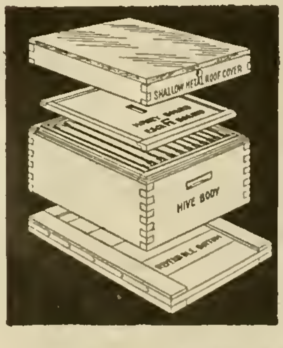


This machine folds or forms comb honey sections and fastens top and bottom comb foundation starters all at one handling, thus saving a great amount of labor. It can be arranged for any width, 4¼x4¼ or 4x5 section. Other sizes, 50c extra for special adjustment. Top and bottom starters insure the comb firmly attached to all four sides; a requirement to grade fancy. Increase the value of your crop by this method. If you have but 10 swarms of bees you cannot afford to be without one, is the statement of one customer. Send for special circular—10 illustrations.

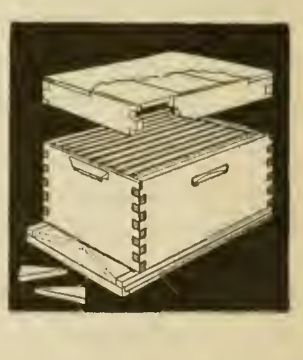
Price with lamp and one form, $2.75. Weight, 4 lbs. 10 ozs. Without lamp, $2.50. Weight, 4 lbs. 4 ozs. Extra form block, 20c. Weight, 5 ozs.

A. G. WOODMAN CO., Grand Rapids, Michigan

PROTECTION HIVE



Do you know that **Protection Hives** are Double Wall, with 7-8 material in the outer wall, and sell for only about 60 cents per hive more than single - wall hives? It will pay you to investigate. Send for catalogue and special circulars.

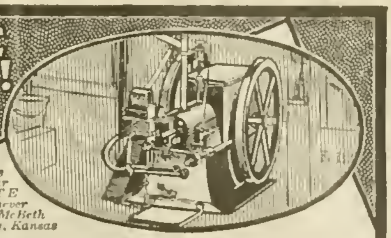


10 Protection Hives, $22.50

10 Single Wall Hives, $16.70

A. G. WOODMAN CO., Grand Rapids, Michigan

NOW, THESE PRICES IN EFFECT!
2 H-P $34.95 4 H-P $69.75
6 H-P $97.75 8 H-P $139.65
12 H-P $219.90
Other Sizes Proportionally Low.



This 21-year old WITTE Engine has never failed its owners, McBeth & Dallas, Garden City, Kansas

LET me send you a WITTE ENGINE to earn its cost while you pay for it. It's cheaper than doing without one.
Ed. H. Witte.

CASH OR EASY TERMS **WITTE ENGINES**
Kerosene, Gasoline & Gas

Sold Only Direct from Factory to User. No matter where you live or what work you have that can be hitched to a belt, you can own a WITTE to better advantage than any other engine. Sizes are 2, 4, 6, 8, 12, 16 and 22 Horse-Power. Styles, **Stationary, Portable, Skidded and Saw-rigs.** Over 27 years in the lead in engine-quality Better now than ever, with prices that can't be beat.

No need now to do without a good engine, or to take chance on a poor or unknown one, to get a low price. The WITTE fills the bill.

My Free Book I furnish highest standard engines for prices less than asked for rattle-traps. My Free Book explains the inside of engine **selling** as well as **manufacturing.** Write today for my Sales Plan with Easy Terms.

5-Year Guaranty On Efficiency and Durability

Ed. H. Witte, Witte Iron Works Co.,
2786 Oakland Av., Kansas City, Mo.

BEES DIE IN CELLARS

that are too damp. A fine nickel-plated instrument that indicates percent of moisture postpaid for only $1.75. A necessity in every home and bee-cellar Free advice how to dry out cellar. **GEO. A. BOYUM, RUSHFORD, MINNESOTA.**

THREE-BANDED BEES—GET THE BEST

Twenty years of breeding and selection has resulted in an exceptionally vigorous and long-lived strain of bees, unexcelled for gentleness, prolificness and honey-gathering qualities. No disease.

	Before May 1st			After May 1st		
	1	6	12	1	6	12
Untested	$1.25	$ 6.50	$11.50	$ .75	$4.00	$ 7.50
Tested	1.50	8.00	15.00	1.25	6.50	12.00
Select tested	2.00	10.00	18.00	1.50	8.00	15.00
1-lb. pkg. bees	2.00	11.00	21.00	1.50	9.00	18.00

Breeders, $5.00 each, any time.

Safe arrival and satisfaction guaranteed on all queens to all points in United States and Canada. Queens for export are carefully packed in export cages; but safe arrival is not guaranteed. Bees by the pound guaranteed within six days of Mathis, Tex. If queen is wanted with bees by the pound, add price of queen wanted to price of bees. Better let me book your orders now.

H. D. MURRY, MATHIS, TEXAS

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

WHITE SWEET CLOVER SEED

10,000 pounds unhulled at 12c per pound. Hulled, cleaned, 20c per pound f. o. b. Cowley. Sacks extra at 25c. Immediate shipment. B. F. Smith, Cowley, Wyo.

SWEET CLOVER SEED

We now have on hand a good supply of sweet clover seed as per prices below. The **recleaned seed** is **machine cleaned,** and entirely free from chaff, dust and straw sometimes found in unhulled seed:

	1 lb.	10 lbs.	25 lbs.	100 lbs.
White Sweet Clover—unhulled (Melilotus alba) recleaned seed	25c	$2.25	$5.00	$18.00
White Sweet Clover—hulled, (Melilotus alba) hand screened	20c	1.80	4.00	15.00
Yellow Sweet Clover—hulled (Melilotus officinalis	26c	2.40	5.75	22.00
Alsike Clover seed	25c	2.25	5.00	19.00

When wanted by parcel post, bags will be included in weight. No charge for bags.

AMERICAN BEE JOURNAL, Hamilton, Illinois

ARE YOU GOING TO BUY LAND?

If so, you should read the Farm and Real Estate Journal. Its editors are authorities. They will keep you informed on the possibilities in all sections of the country, and will save you money and mistakes in buying. Only publication of its kind. Established 10 years. Send 10c today for 4 months' trial subscription, or 25c for one year. It will be stopped at the end of the time ordered unless you renew.

Farm and Real Estate Journal
Box 32, Traer. Iowa

LOOK! BEEKEEPER

E 3 SQUARE SHEARS

Two cut [illegible]-inch foot power; one cuts 30. Hand-lever power in good condition; cuts fine. Just the thing for beekeepers. Price, $10 each f. o. b. Square, N. Y.

H. E. HESSLER CO.

Paint Without Oil

Remarkable Discovery that Cuts Down the Cost of Paint Seventy-Five Per Cent

A Free Trial Package is Mailed to Every One Who Writes

A. L. Rice, a prominent manufacturer of Adams, N. Y., has discovered a process of making a new kind of paint without the use of oil. He calls it Powdrpaint. It comes in the form of a dry powder, and all that is required is cold water to make a paint weather proof, fire proof, and as durable as oil paint. It adheres to any surface, wood, stone or brick, spreads and looks like oil paint, and costs about one-fourth as much.

Write to Mr. A. L. Rice, Manufacturer, 216 North St., Adams, N. Y., and he will send you a free trial package, also color card and full information showing you how you can save a good many dollars. Write today.

HONEY AND BEESWAX

CHICAGO, Dec. 19.—Comb honey is steady with no change since last quotations. Prices are easier on extracted, with white clover and linden bringing 9@10c per pound, the other grades from 1@3c per pound less according to grade. Beeswax steady at from 31@33c per pound. R. A. BURNETT & CO.

KANSAS CITY, MO., Dec. 17.—The supply of both comb and exracted honey is light; the demand good. We quote as follows: White comb, $3.25 to $3.50; amber, $3.00 to $3.25. White extracted, 8c per pound; amber, 7c. Beeswax, 25@28c.
C. C. CLEMONS PRODUCE COMPANY.

DENVER, Dec. 19.—There is no comb honey left for home trade, but there is still a good demand for carload lots. Stock should be cleaned up everywhere before another crop. There is a fair demand for strictly first-class white extracted honey. Our local jobbing prices are 8⅔c for white; 7½@8⅓c for light amber; 6@7c for strained. We pay 26c in cash and 28c in trade for clean yellow beeswax delivered here
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

CINCINNATI, Dec. 22.—Little demand for comb and extracted honey. Comb honey is moving fast at $3.50 to $4.00 per case. Fancy white clover, extracted, from 8@10c per lb., and amber has been selling from 5½@7c per pound. Beeswax, 28@30c a pound.
THE FRED W. MUTH CO.

UCKEYE CHAFF HIVES
DOVETAILED HIVES
Sections, Comb Foundation
Choice Northern-Bred Italian Queens
Bees by the pound
General Agents for Root's Goods in Michigan
SEND FOR 1915 CATALOG
M. H. HUNT & SON
Lansing, Mich.

FARM FENCE

41 INCHES HIGH FOR **21 CENTS A ROD**

Stays only 6 inches apart. Wires can not slip. 100 styles of Farm, Poultry and Lawn Fencing direct from factory at money saving prices. Ideal Galv. **BARBED WIRE $1.45** 80-rod spool. Catalog free.

KITSELMAN BROS. Box 85 Muncie, Ind.

FLORIDA For 10 Cents

Two months trial subscription to Florida's only Agricultural weekly. Tells facts. Answers questions about soils and crops. Address FLORIDA GROWER, Box A, Tampa, Florida.

1915 MODEL 22 Cal. HUNTING RIFLE **Free**

A REAL GUN. Take-Down pattern, with latest improvements, walnut stock and grip. Shoots accurately 22 long or short cartridges. Handsome, durable. **SEND NO MONEY** only your name and address for my easy plan of securing this fine rifle **Absolutely Free** express prepaid. Write today. D. W. BEACH, Box 80, Spencer, Ind.

Canadian Beekeepers!

The undersigned desire to thank their many friends for the splendid support given them in the past, and beg to announce an "**ALL CANADIAN LINE**" for the season of 1915, including **DADANT'S FOUNDATION,** of course.

CATALOG NOW IN THE PRESS—SEND FOR IT—IT'S FREE

THE CHAS. E. HOPPER CO., Toronto, Ont.

The New Year is here—We are ready for your Bee Supply orders

Don't Forget HERE IS THE ONLY PLACE YOU CAN GET **MUTH** SERVICE QUALITY SPECIAL Dovetailed Hive

THE NEW MUTH 1915 CATALOG
Send for it—Watch for it—Wait for it

It will soon be out—everything you need is in there—HIVES—BROOD FRAMES—FOUNDATION—SECTIONS—SMOKERS—BEE VEILS—BRUSHES, ETC., ETC. WRITE NOW—DON'T DELAY. Should you wish to order some supplies before you receive the new catalog, use our 1914 edition as prices will be the same. If you haven't a copy, write for it.

THE FRED W. MUTH COMPANY
204 WALNUT STREET "The Busy Bee Men" CINCINNATI, OHIO

P. S.—Ship us your old combs and cappings and let us render them for you. Our process extracts the last drop of wax from the slumgum. This means money for you. Write for full particulars.

SYRACUSE CHICAGO NEW YORK BALTIMORE CANONSBURG

CONTINENTAL CAN COMPANY
INCORPORATED

HONEY CANS
All Styles—All Sizes

Friction Top
Boxed Square Cans
60-Pound Shipping Cans

HONEY PAILS

Sales Offices: 2201 South Halsted St., Chicago
616 W. 43d Street, New York City

MARSHFIELD GOODS

BEE-KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. The CHEAPEST for the Quality ; BEST for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

EARLY ORDER DISCOUNTS WILL
Pay You to Buy Bee Supplies Now
30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.
LEAHY MFG. CO., 90 Sixth St., Higginsville, Missouri

GUS DITTMER COMPANY
MAKERS OF
DITTMER COMB FOUNDATION
Wish you the best of
SUCCESS AND HAPPINESS
In 1915
Make the year Brighter and Better by ordering your 1915 stock of DITTMER COMB FOUNDATION now.
Gus Dittmer Company, Augusta, Wisconsin

WANTED
Honey!
Extracted and Comb
—ALSO—
Beeswax
Will pay full market value. Write us when you have any to dispose of
Hildreth & Segelken
265-267 Greenwich St., New York, N. Y

Beekeepers' Supplies
Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description. Shipping-cases, Section-holders, Comb-foundation, Smokers, etc.
Get my prices before placing your orders.
R. H. SCHMIDT
Rt. 3, Box 209, Sheboygan, Wis.

EASTERN
Beekeepers
If you are in need of shipping cases, cartons, honey jars, or anything in the supply line, let us quote you on them. No. 25 jars with bronze cap, $1.60 a gross. Five gross, $1.30 a gross. Untested Italians queens, $1.00.
I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

OUR VERY BEST IS THE VERY BEST
BEE SUPPLIES
Best Sections, Best Shipping Cases
Best of all Supplies
Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready by Jan 15. Send your name and get one.
H. S. DUBY & SON, St. Anne, Ill., carry a full line of our goods.
AUG. LOTZ CO. BOYD, WIS.

FREEMAN'S FARMER North Yakima, Wash.
Successor to Northwest Farm and Home
69 YEARS OLD
If you want a descriptive and agricultural magazine, it will inform you all about the methods in the Pacific Northwest
Send One dollar during October, November or December, and the magazine will be sent for one year. Cut rate of one-half price now on.

THE BEST TIME TO BUY SUPPLIES

The season just passed has demonstrated more clearly than ever the necessity for being prepared for a honey-flow **before** it comes. If you wait until the season is upon you, the chances are that the greater part of the crop will be lost while you are impatiently waiting for supplies to arrive. It may seem a little early now to think of next season's honey harvest; but the fact of the matter is, this is just the time to order goods for next season.

We are beginning now to replenish our stocks. We shall soon have carload orders coming from the factory. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in new unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—5 percent for cash orders sent in November, the discount lessening one percent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices has as yet been announced, and you may, therefore, order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

C. H. W. WEBER & CO.,

2146 Central Avenue, **Cincinnati, Ohio**

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

PLATTEVILLE, WIS., JUNE 1, 1914.

Dear Friends:—

Just put on 500 sheets of the new foundation we received from you this spring, and must say that it is the best I have ever used or seen. The side walls seem to have a sixteenth of an inch start, and the quality of the wax is fine—two decided advantages. The foundation deserves all the praise I can give, as it is certainly excellent.

Sincerely yours, FRANK F. FRANCE.

Comb Foundation, Bee-Supplies, Honey, Beeswax, Sweet-Clover Seed, etc. Old Combs, Cappings or Slumgum rendered into Beeswax on shares and Beeswax worked into Foundation

DADANT & SONS,

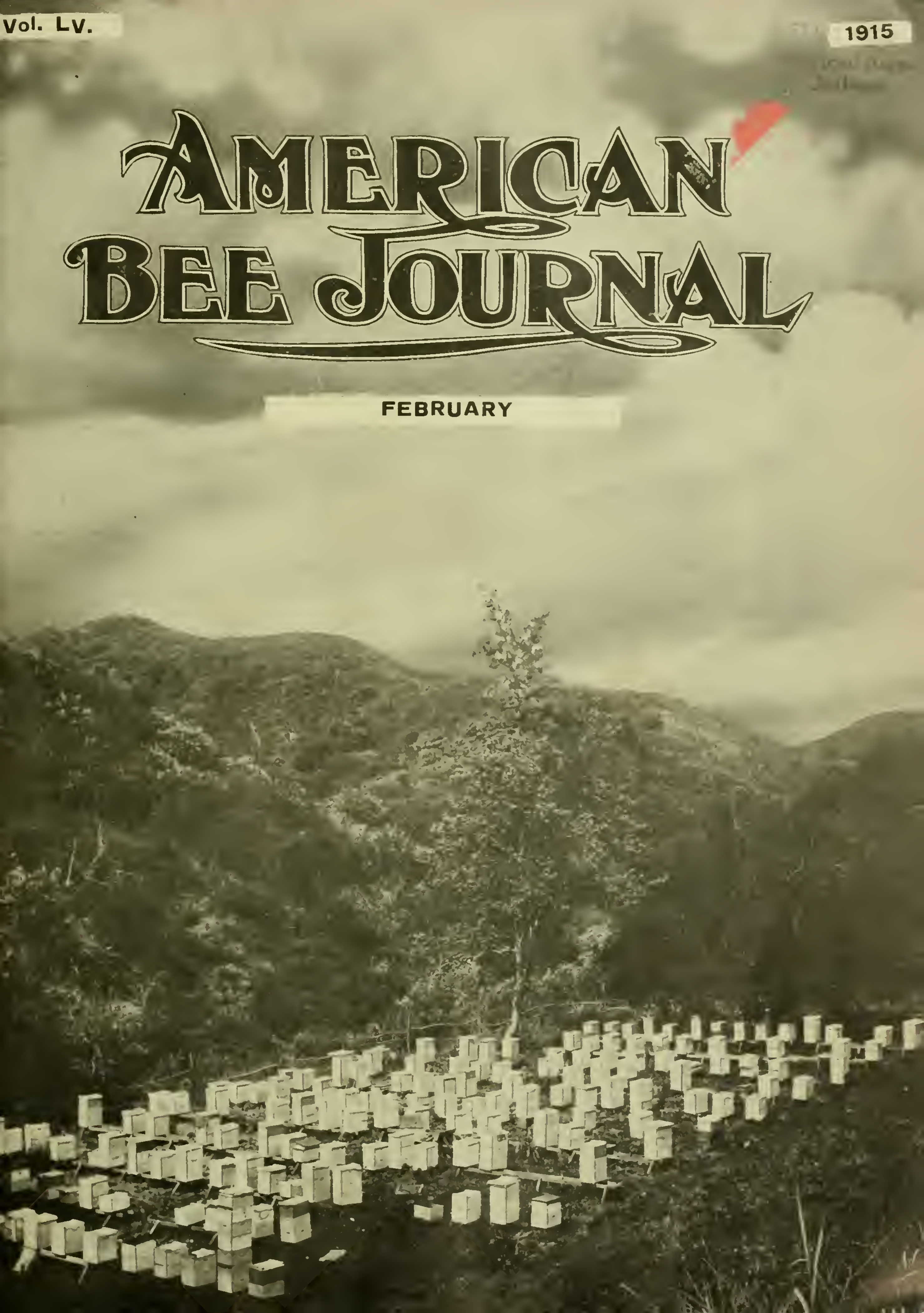
HAMILTON, ILLINOIS.

Vol. LV.

1915

AMERICAN BEE JOURNAL

FEBRUARY



AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL
PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec15" on your label shows that it is paid to the end of December, 1915.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.
Nothing less than 5 lines accepted

DISCOUNTS:

3 times 14c a line 9 times 11c a line
6 " 12c " 12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

☛ **Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD**

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
State Entomologist

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n } **ANTHONY BIAGGI,**
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

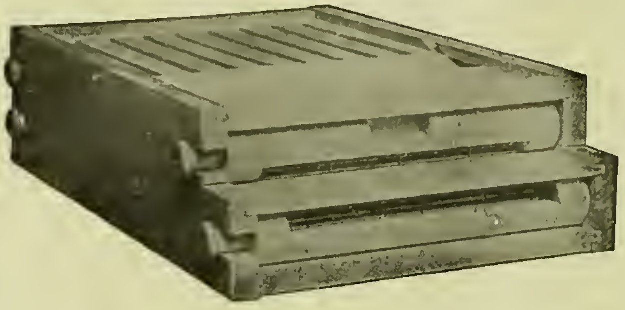
Bee-Supplies

LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

Roller Entrance Bottom Board



WHY WORRY IN THE WINTER TIME ABOUT YOUR BEES BEING MUSTY IN THE SPRING, THIS BOTTOM-BOARD keeps bees and combs clean and healthy. Dead bees drop away from frames. If by chance they become short on stores during the spring months, "open the rear or front," and hand them a supply. It is done easy with this Bottom Board. Made in 8 and 10 frame size. $2.50 per. Nothing but pure Italian stock in outyard of 100 colonies.

Breeders $10 to $25. Guarantee Satisfaction.

CHAS. G. SCHAMU
INVENTOR AND MANUFACTURER
Box 48 - Liverpool, New York

The New Year is here—We are ready for your Bee Supply orders

Don't Forget HERE IS THE ONLY PLACE YOU CAN GET MUTH SERVICE QUALITY SPECIAL HIVE

THE NEW MUTH 1915 CATALOG
Send for it—Watch for it—Wait for it

It will soon be out—everything you need is in there—HIVES—BROOD FRAMES—FOUNDATION—SECTIONS—SMOKERS—BEE VEILS—BRUSHES, ETC., ETC. WRITE NOW—DON'T DELAY. Should you wish to order some supplies before you receive the new catalog, use our 1914 edition as prices will be the same If you haven't a copy, write for it.

THE FRED W. MUTH COMPANY
204 WALNUT STREET "The Busy Bee Men" CINCINNATI, OHIO

P. S.—Ship us your old combs and cappings and let us render them for you. Our process extracts the last drop of wax from the slumgum. This means money for you. Write for full particulars.

SUPPLY
YOUR HONEY CUSTOMERS
WITH
Fine White Alfalfa
CAN SUPPLY ANY QUANTITY
Extracted honey packed in 60, 10, 5, and 2½ lb. cans
Send for sample and prices today
DADANT & SONS, Hamilton, Ill.

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address

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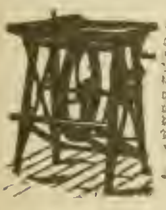
Greater San Francisco

BARNES' Foot-Power Machinery



Read what J. I. Parent, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in cap, 100 honey racks, 500 brood frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee-hives, etc. to make and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
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TRY MY FAMOUS QUEENS

From Improved Stock

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, 1, $1.00; 6, $5.00; 12, $9.00; 25, $17.50; 50, $34; 100, $65 Tested, 1, $1 50; 6, $8.00; 12, $15.00. Breeders of either strain, $5 00. Nuclei with untested queen, 1-frame, $2 50; six 1-frame, $15.00; 2-frame, $3 50; six 2-frame, $20.40; nuclei with tested queen, 1-frame, $3 00; six 1-frame, $17.40; 2 frame, $4.00, six 2-frame, $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

Ask for our *free* paper

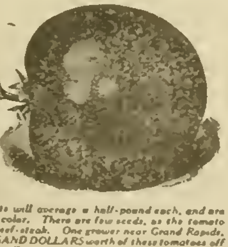
SUPERIORITY OF CARNIOLAN BEE

Investigate the merits of these bees before placing your orders for queens the coming season. Orders booked now for queens and bees by the pound in season.

Albert G. Hann, Clinton, N. J.

A TRIAL PACKET of *This Grand* *TOMATO*

FREE!



Rowe's GRAND RAPIDS MARKET TOMATO was originated by Mr. George E. Rowe, the Editor of THE FRUIT BELT, America's Greatest Fruit Magazine. This tomato is the very earliest of the heavy cropping varieties, it yields abundantly, a Grand Shipper, and is the Most Delicious Tasting tomato ever put upon the market. In Size, the individual fruits will average a half-pound each, and are very uniform in shape, size, and color. There are few seeds, as the tomato is solid, and cuts like a piece of beef-steak. One grower near Grand Rapids, Mich., sold OVER TWO THOUSAND DOLLARS worth of these tomatoes off of two thousand vines. We are willing to stake our reputation on this tomato. The seed cannot be procured from Seedsmen, as we own the entire stock. We are GIVING IT AWAY to introduce THE FRUIT BELT, and you can get a packet, if you act now.

The Fruit Belt America's Greatest Horticultural Journal

Shows you How to Make Money Raising Fruit: How to Prune and Thin Properly: How to Control Insects and Plant Diseases by Spraying: What Varieties to Plant: How to Set out New Orchards: How to "Rejuvenate" Old Orchards. THE FRUIT BELT is a Big Illustrated Magazine, Filled with Good Things for You.

TRIAL OFFER *We will send THE FRUIT BELT to your address for the remainder of this year, upon receipt of Thirty Cents, and we will send to you, by return mail FREE, a trial packet of Rowe's Grand Rapids Market Tomato seed. Don't delay, the stock is limited. Address*

THE FRUIT BELT, R.112, HAWKINS BUILDING
GRAND RAPIDS, MICHIGAN

BINGHAM HONEY UNCAPPING KNIVES

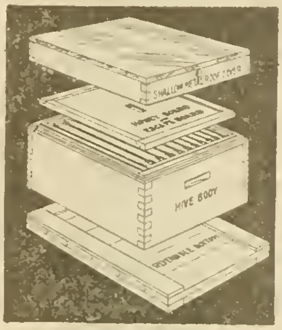
With the New Improved Cold Handle

Standard length, each $ .75 Ship wt., 20 oz.
Extra long " .85 " " 21 "
Steam heated with 3 ft. tubing 2 5 " " 36 "

Our knives are made of the very best material and by the same local workmen for the past 30 years. There have been many imitators of the Bingham Knife which accounts for the various poor contraptions on the market. The new Cold Handle is a decided improvement over all others as it fits the hand perfectly; the lower part of the wood handle projects down along side the shank of the knife, forming a Thumb Rest that does not become hot when used with hot water or steam. Mr. Townsend says this knife appears to be the best yet produced.

A. G. WOODMAN COMPANY,
Grand Rapids, Mich.

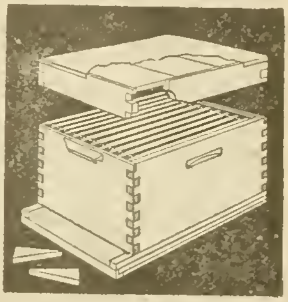
PROTECTION HIVES



10 Protection Hives, $22.50

Do you know that PROTECTION HIVES are double walled, either air spaces or packing as you prefer, with ⅞ material in the outer wall? That they will sell for less than 60 cts. per hive more than single wall hives? Have you ever tried to keep a single boarded house hot in the winter or cool in the summer? Wake up brother! Wake up! You know the benefits of protection

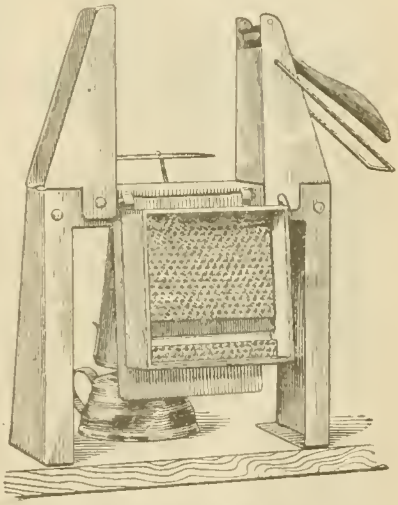
Send for catalog and special circulars. 10 illustrations.



10 Single Wall Hives, $16.70

Woodman's Section-Fixer

A combined Section Press and Foundation-fastener of pressed steel construction



This machine folds or forms comb-honey sections and fastens top and bottom comb foundation starters all at one handling, thus saving a great amount of labor. It can be arranged for any width, 4¼x4¼ or 4x5 section. Other sizes, 50 cts. extra for special adjustment. Top and bottom starters insure the comb firmly attached to all four sides, a requirement to grade fancy. Increase the value of your crop by this method. If you have but ten swarms of bees you cannot afford to be without one, is the statement of one customer. Send for special circular, ten illustrations.

Price, with lamp and one form, $2.75; wt., 4 lb. 10 oz. Without lamp, $2.50; wt. 4 lb. 4 oz. Extra form block, 20c, wt. 5 oz.

A. G. WOODMAN CO.,
Grand Rapids, Michigan

SWEET CLOVER SEED

We now have on hand a good supply of sweet clover seed as per prices below. The **recleaned seed** is **machine cleaned,** and entirely free from chaff, dust and straw sometimes found in unhulled seed:

	1 lb.	10 lbs.	25 lbs.	100 lbs
White Sweet Clover unhulled Melilotus alba recleaned seed	25c	$2 25	$5.00	$18.00
White Sweet Clover—unhulled Melilotus alba hand screened	20c	1.80	4.00	15.00
Yellow Sweet Clover hulled Melilotus officinalis	26c	2.40	5.75	22.00
Alsike Clover seed	25c	2.25	5.00	19.00

When wanted by parcel post, bags will be included in weight. No charge for bags.

AMERICAN BEE JOURNAL, Hamilton, Illinois

WANTED at once 1000 more customers to try some of that sweet pure "**Falcon**" foundation and some of those high class "**Falcon**" bee supplies. Samples of "**Falcon**" foundation, copy of "Simplified Bee-Keeping" and Red Catalog will be mailed free for the asking.

W. T. Falconer Mfg. Co., Falconer, N. Y.

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

Beekeepers' Supplies

Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

J. NEBEL & SON SUPPLY CO.,
High hill, Montg. Co., Mo.

Leather Colored Italians

I claim that my strain of bees is as good as the best, and guarantee them to give satisfaction. I have the kind of Queens that you want. Am booking orders now. Write early.

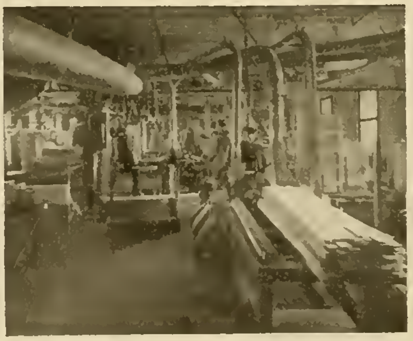
C. S. ENGLE,
Beeville, Bee Co., Texas

Where the Dovetailed Hives are Made

Three entire floors of our factory are devoted to making hives, sections, frames, supers, shipping cases, queen-cages, nucleus boxes, and all other articles made of wood, a glimpse of one of which can be had from the accompanying illustration.

Here are located the many and often complicated machines and appliances, most of which were designed and built especially for us and each one of which makes but a small part of the hive. Visitors have often expressed surprise that so small an object as a section honey box, for instance, should require so much handling and pass through so many hands until the final product is ready for shipment.

There are probably few beekeepers who have any idea how the dovetailed hive is made, and who realize that, first of all, the lumber must be carefully selected and seasoned, then cut into the right lengths, passed through the machines which dovetail the sides and ends; through other machines where they are fitted together; nailed and sandpapered; provided with rabbets in the interior, etc., etc.; while at the same time the bottom-board and the cover is made in another part of the factory, each one of which requires similar handling. The various parts of the hive are then sent to the assembling room, where they are put together, and finally to the packing room, where they are packed in such a manner as to occupy the least possible space (thus reducing the cost of transportation to a minimum), and shipped to all parts of the globe.



A Corner of One of the Floors Devoted to Woodworking

"**ROOT'S GOODS**" have, indeed, become a synonym for perfect workmanship and the best materials, and are known in every civilized country of the world.

Our 1915 catalog (the largest we have ever published) is now ready for distribution, and will be promptly mailed, postpaid, on receipt of a post card.

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Philadelphia, 8-10 Vine St.
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Syracuse, 1631 West Genesee St.
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Our Special Big Four Magazine Offer!

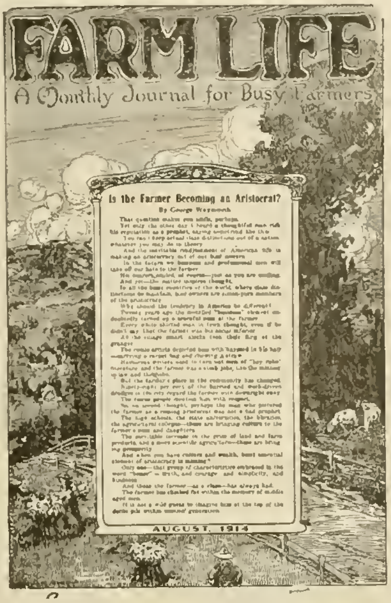
Woman's World—Household—People's Popular Monthly—Farm Life

A special arrangement secured by the American Bee Journal, enables us to offer to our subscribers for a limited time only the American Bee Journal for one year with a full year's subscription to all four of the above high-grade publications, at the special price of **$1.30.**

Four Big Magazines and American Bee Journal All Five for $1.30

WOMAN'S WORLD

WOMAN'S WORLD has more subscribers than any other magazine published, over two million a month. Its articles, its stories, its illustrations, are the best that money can buy. It is a magazine to be compared with any home magazine in the country, regardless of price, without fear of contradiction of any claims we make for it. Its stories are by authors known the world over.


FARM LIFE
A Monthly Journal for Busy Farmers
Is the Farmer Becoming an Aristocrat?
AUGUST, 1914

FARM LIFE is a publication adapted to the everyday life of the farm folks, brimfull of things that help to make the farm life more cheerful and homelike. Special articles by authorities on all subjects of interest to the up-to-date farmer.

THE PEOPLE'S POPULAR MONTHLY

PEOPLE'S POPULAR MONTHLY is one of the greatest popular fiction and home magazines published. Contains complete stories each issue.

The HOUSEHOLD

THE HOUSEHOLD—A favorite magazine in a million homes. Every issue has many interesting features.

This offer supplies you with a Magazine of the best quality, giving you a year's supply of good literature at a saving of one-half cost

This is the **best** and biggest combination clubbing offer ever presented to the public. The pubisher of the American Bee Journal is glad to announce to his subscribers the completion of this splendid arrangement, whereby he can offer such an excellent list of publications in connection with a year's subscription to the American Bee Journal at the remarkable price of $1.30 for all five. This offer is good for a **short** time only, and may be increased at any time.

AMERICAN BEE JOURNAL, Hamilton, Illinois

CLOSING OUT SALE
—OF—
BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
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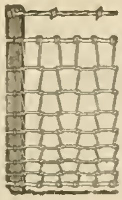
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.30
Muth Bee-Veil (75c)	.60
Danzenbaker Bee-Smoker ($1.00)	.80
	$3.60

Or *all* the above in one order to one address *for only $3.00.* (The retail price of the bunch is $4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

**Colorado Honey-Producers' Association
Denver, Colorado**



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41 INCHES HIGH FOR 21 CENTS A ROD

Stays only 6 inches apart. Wires can not slip. 100 styles of Farm, Poultry and Lawn Fencing direct from factory at money saving prices. Ideal Galv. **BARBED WIRE $1.45** 80-rod spool. Catalog free.

KITSELMAN BROS. Box 85 Muncie, Ind.

Special Announcement to Beekeepers in

Ohio, Kentucky, CENTRAL AND SOUTHERN Indiana and the East

Having discontinued the distribution of LEWIS BEEWARE from INDIANAPOLIS, INDIANA, and PEEBLES, OHIO, we have recently arranged with

THE FRED W. MUTH CO.,

204 Walnut Street, CINCINNATI, OHIO

For the distribution of LEWIS BEEWARE in your territory

The MUTH COMPANY is one of the largest honey and bee supply houses in the country, and CINCINNATI is one of the best shipping points

With this new distribution arrangement, we can serve you better in every way than we have heretofore

BEEKEEPERS IN NORTHERN INDIANA

Will be served from our MAIN OFFICE and FACTORY at WATERTOWN, WISCONSIN. As WATERTOWN is only one night's freight from CHICAGO, shipments leaving us in the afternoon pass through CHICAGO the next morning, going over one of the numerous roads direct to destination.

THE NEW LEWIS 1915 CATALOG
Almost entirely rewritten

It is now out. If you are not on the Lewis mailing list, send in your name at once or you will miss something good

44 pages brimful of good things including 150 illustrations, many of them new and showing articles more in detail than ever before

IT'S YOURS FOR THE ASKING—A POSTAL BRINGS IT

G. B. LEWIS COMPANY

Manufacturers of Lewis Beeware

Watertown, Wisconsin

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor

HAMILTON, ILL., FEBRUARY, 1915

Vol. LV.—No. 2

EDITORIAL COMMENTS

Overproduction

Concerning the overproduction of honey of which some people complained a year or two ago, it appears that, some 20 years ago, there was already some complaint to that effect. In the American Bee Journal of May 24, 1894, Hon. Eugene Secor, quoting United States statistics, showed that less than 64,000,000 pounds was reported in the census, and said:

> "It does not seem much like overproduction, when only one pound of honey per capita is produced in the United States." To this Editor York replied: "No it is not overproduction, but under distribution."

Breeding—Inducing Queens to Lay

In an editorial, in Gleanings in Bee Culture lately, E. R. Root speaks of two carloads of bees that were sent to Virginia Oct. 20 and Nov. 16, and says:

> "In both carload shipments it was observable that the shaking up, loading and unloading *en route* started the queens to laying in all the hives. By the time the shipments arrived there were eggs and larvæ to be seen in all the hives."

In a similar occurrence, with similar results, the elder Dadant wrote: "When colonies are disturbed, for any reason, the bees fill themselves with honey from their cells, in the anticipation of being compelled to abandon their home. While they are thus laden, they offer honey to their queen oftener and in greater amount. The queen being thus induced to eat, the eggs develop in her ovaries and the result is increased laying. A natural production of honey, or artificial feeding, or scratching the cappings of sealed combs by the apiarist, or continuous disturbances of well-supplied colonies will produce similar effects." This was written in 1872.

The testimony above given of increased laying from a simple continuous disturbance at a time when queens do not usually lay eggs at all, would tend to confirm the given explanation. We may add to this influence, however, the increase of heat caused by the disturbance of confined colonies. From this valuable information the reader will draw useful conclusions.

Our Cover Picture

The excellent photographs of Mr. Mendleson's apiary, given in California department of this number, brought recollections of a picturesque California apiary printed as front cover on the American Bee Journal in August, 1907. We have reproduced the photograph on our front cover, this issue. It represents a Los Angeles county apiary.

Is Sealed or Unsealed Brood Better to Hold a Swarm?

Referring to question of "Subscriber," page 423, and the answer thereto, my correspondent says he is confident he has seen the statement that bees will never desert uncapped brood. I don't doubt it. Indeed it has been, and I think is yet, the orthodox thing to say that the best thing to hold a swarm after it has been hived is to give it a frame of unsealed brood. I don't know for certain that this popular belief is wrong at least wrong so far as it teaches that unsealed is better than sealed brood to hold a swarm—but I suspect it is. I wish we could know for certain, and it ought not to be so very hard to decide. If there should be put in one side of a hive a comb containing sealed brood and no unsealed brood, and on the other side a comb containing sealed brood, and then a nucleus or a small swarm should be put into the hive, I think they would be likely to cluster at one side or the other, upon the comb having the strongest attraction for them.

In actual practice it may not be so important to have the right answer to the question, for generally when a frame of brood is given it contains both sealed brood and unsealed, and it is quite possible that this is better than to have either sealed or unsealed alone.

According to the usual belief, it would not be at all illogical to suppose that an unsealed queen-cell would be more respected by the bees than a sealed one, but facts, as already intimated, are against such belief.

C. C. M.

Sugar Syrup Crystallizing

Those of our readers who took an interest in the discussion of the proportion of water and sugar for syrup will be interested in reading the following letter to Dr. Miller by Mr. McKinnon. We will be glad to have the matter sifted to a satisfactory solution. See what Prof. Bartholomew said on this subject at the Minnesota meeting:

> "I am enclosing in this letter a sample of candied sugar stores that I took from the entrance of a hive in the cellar. There are about a dozen others that show the same signs of candied stores.
>
> "These colonies were fed a sugar

syrup made of 1½ water to 2 of sugar, one teaspoonful of tartaric acid being added to every 20 pounds of feed. As my colonies are all placed in the cellar it would be foolhardy on my part to disturb them; but from past experiences I don't have to be told that a good part of their stores is a dead loss, but if this thin feed properly made will candy in my yard, it ought to interest others." JOHN A. McKINNON.

St. Eugene, Ont.

Poet of American Beekeeping

We are indebted to our old friend, Eugene Secor, of Forest City, Iowa, for a neat pamphlet entitled, "The Calendar," containing 17 short poems written by him. Our friend's name and writings are well-known to the veterans in beekeeping. The files of the American Bee Journal contain a number of his essays. We reproduce from his poem on "May," which appeared in May, 1901, in these columns, two pretty stanzas:

One day
I passed the orchard where the bloom
Seemed coaxing honeybees
To stop and sip its tempting wine,
And pack their basket-knees
With dainty bread on which to dine—
All laden with perfume—
And it was May.

In May
The dandelions ply their art
To spread a honey feast;
They fling their yellow banners out
Against the beaming East
As if to say to bees about,
"We yield our inmost heart,
Kiss us we pray."

The words of the "Beekeepers' Songs," formerly published by Mr. York, are nearly all by Mr. Secor. It may be well to add, for the information of the younger readers, that Mr. Secor is a patriarch of 73 summers, who has had a useful life. He has been Mayor of his city, member of the Board of Trustees of the Iowa Agricultural College, president of several horticultural and apiarian associations, of the National Beekeepers' Association at the Washington meeting in 1892, judge of the honey exhibit of the Columbian Exposition of 1893, and General Manager of the National Beekeepers' Union from 1897 until 1902. A son of Mr. Secor, Alden, is chief editor of "Successful Farming," one of the *successful* farm magazines.

In sending us this little gift, Mr. Secor wrote: "I feared you would not care for that kind of writing, and yet I wanted you to know that I cared for *you*." A delicate compliment could not be worded in a nicer way. The feeling is heartily reciprocated.

Iowa Inspection

We acknowledge receipt of the 3d Annual Report of the State Bee Inspector of Iowa, by Frank C. Pellett.

This is a work of 126 pages, magnificently illustrated and replete with information. Every beekeeper of Iowa should have it. It contains a number of essays read at the meeting of the State Association. Of especial importance among them is that by E. F. Phillips, the Government expert at Washington, upon "Temperature and Humidity in the Wintering of Bees."

Send for it to Frank C. Pellett, of Atlantic, Iowa.

MISCELLANEOUS NEWS ITEMS

Moves to Louisiana.—Mr. J. F. Archdekin, a queen-breeder formerly located at St. Joseph, Mo., has bought a 200-colony outfit at Big Bend in Louisiana. Mr. Archdekin expects to do queen-rearing in his new location.

◆

New Secretary of the Missouri Apicultural Society.—Dr. A. D. Wolfe, of Parkville, Mo., was born in Montclair, N. J., 1861. He entered the ministry as a graduate from New York University and Union Theological Seminary; spent six years in Iowa and Nebraska; since 1896, he has been in Missouri acting variously as president of a school, librarian and registrar of Park College and as pastor of prominent churches. He made his first acquaintance with the bee when he caught a swarm in a coffee box; fell in love with the art, and has ever since handled the bee from both practical and scientific standpoints. He reads enormously of bee-literature; keeps a few colonies, but sets such a good example that his bees must work. He makes his own equipment; belongs to the Missouri Apicultural society, and was elected secretary December, 1914.

His quickness, accuracy, training, education and practical common sense make him a most valuable man for the place; his letters and records are models of conciseness, short sentenced, and his points always easily understood.

Perhaps we ought to admire the man who tries but fails, but we don't. The man who tries and succeeds gets the applause, and such a man is Dr. Wolfe; when you meet him you recognize at once that you have met a real man, unassuming, modest, capable and up-to-date.

Having served as secretary of the State Association for three years, and having known Dr. Wolfe for the same length of time, I feel qualified to introduce him to the beekeepers of Missouri, and beg that each will give him all the assistance possible.

By the time this is in print we shall have been incorporated under the laws of Missouri; a point we have been trying to reach for three years, and the credit for its accomplishment rests with the good members of the society, and every member is a good one or he would not belong.

AUSTIN D. WOLFE OF MISSOURI

Now let every citizen, whether a member or not, jump in and help get our foulbrood law through the Legislature at this term, and we will make old Missouri one of the great bee States of the Union. Send to Dr. Wolfe for a copy of the proposed law.

Liberty, Mo. J. F. DIEMER.

◆

The War and Swiss Beekeeping.—"I have been unable to keep my promise to send interesting Swiss beekeeping views. But I hope to be able to redeem it next year, if we are preserved from the mishaps of this terrible war which surrounds us.

"The year has been very bad for our bees; in the Jura-Bernois, the crop was a failure. Then came the war. We have been mobilized to guard our frontiers. As I was called to service and was released only a few days ago, for six weeks, I was unable to make photographs. However, I took four, which I send you.

"Owing to the mobilization many apiaries have suffered, and many bees will die for lack of attention. The owners having gone to the front, there was no one to take care of the bees. During the trip of our regiment in the Franches-Montagnes, I had occasion to visit an apiary which was starving, for want of attention, in September. It was composed of 28 colonies, which must be dead by this time. As we have been three years without a crop, many of our friends are discouraged. But I advise them to take courage, as we may soon have a good season.

"Today, Dec. 6, and for the past three or four days, we have had bright sunshine and the bees have taken flight just as in May, but it will not last.

"My own 20 colonies, which I fed before my departure, are in good shape with plenty of food. I trust they will all be living next spring.

"Foulbrood appeared here in 1912, but thanks to the activity of the inspector and the willingness of the owners, it was overcome and we think we are are rid of it. It did not have a chance to do much damage.

"Joseph Walther.

"Delémont, Switzerland."

We glean the following from a letter just received from our venerable friend, Edouard Bertrand, formerly editor of the Revue Internationale, living at Geneva, Switzerland:

"Thus far, in Switzerland, we have been spared, but all our youth is in arms at the frontier and business is paralyzed. Many people are without work, incomes are stopped, and one is compelled to reduce expenses. We keep our servants though unable to pay them wages, for they would be out of work. My wife has joined the 'Prisoners' Agency,' which has undertaken the finding of information concerning soldiers that have either been killed or made prisoners, whether French English or German. This agency has helped many families to find out the fate of their sons or husbands. It has received as many as 15,000 enquiries in a day, and it often has requests of fathers who have four or five sons, whose fate is unknown. War has terrible results, even in our neutral country, and the suffering is great. Our health is good, but I am exceedingly nervous, owing to these cruel circumstances."

◆

House Apiaries—A Plea for Them.—The following letter, concerning the "Notes from Abroad" for September, was not intended for publication, but as it gives in very forcible words a plea for house apiaries, we hope our correspondent will forgive us for publishing it. Hear all sides, then decide:

"Dear Mr. Dadant—Your point of view, in judging our apiary methods, has much interested me. It proves the well-known fact, that the appearance of things changes according to the position of the observer. You recognize that our method of beekeeping has great points of convenience, but you doubt its adaptability to American conditions, and you say: 'Would it be possible to combine the use of a bee house with the expansible hives and supers which enable us to secure our large crops?' You doubt whether it be possible for us to extract as much honey in a day as you do. I do not know how much honey you extract in a day, but it is a fact that here, the apiarist removing the combs can supply, without help, as many of them from the hives as the reversible extractor can extract. In the leaf hive, where each comb is as accessible to the apiarist as in the Dadant hive, when harvesting, we do not touch the empty combs or the half filled ones, but only the full ones, replacing them at once with already extracted combs. When the extracting is over, our hives are already thus supplied with empty combs. The only difference between our work and yours is that you do it all at one time, while we do it in three or four different times, according to circumstances, always at the proper time, whether the weather be good or bad.

"To know whether it is advisable to extract, all we need to do is to open the rear door of the hive and glance at the appearance of the combs. An examination is unnecessary. Besides, the honey being extracted from warm combs is quite liquid. It is at once strained through three sieves of different meshes, the finest being at the bottom. By this process we obtain very pure honey, which is promptly put into tins. In our well closed bee houses the work may be done without any annoyance from the bees and without risk of robbing.

"I have never used gloves, and years may pass without the need of even a veil. It is the strange bees flying about the open hives which cause stinging. In closed house apiaries, they have no access to the operation. It is true that our apiaries are more expensive than yours, but with us everything is more expensive. For instance, a Dadant hive costs us between $5.20 and $5.60; a leaf hive costs $8.40. You may readily see the difference.

"I read that in America many beekeepers use bee houses in which to extract the honey. Why then do you not place leaf hives in them, where they will be protected against weather changes and where wintering is less difficult; where examinations are so easy that one never needs help; where a very small bee smoker, and even only a light cigar, is sufficient to quiet the bees, and the handling of them is a pleasure? H. Spuhler.

"Zurich, Switzerland."

Mr. Spuhler's leaf hive is a hive from which the combs may be drawn from the end of the frames instead of from the side, as in most of the Berlepsch style of hives. The frames in it are at right angles with the entrance instead of parallel with it. Hence, his ability to draw out any frame he wishes, leaving the others in the hive.

◆

The Akron, N. Y., Meeting.—The beekeepers' meeting which was held at Akron, N. Y., Dec. 15, 1914, was a success as far as the purpose of the meeting was concerned. While the weather was very inclement, snow and bitter cold, the beekeepers who are real honey-producers were there in sufficient numbers to form an association to be known as the Western New York Honey Producers' Association.

It was repeatedly brought out that the beekeepers must stick together and try to increase the sale and consumption of honey as a food. They must also buy their supplies cooperatively and apply business principles to beekeeping as well as they are applied to other lines of occupation.

Another argument taken up was the difference in the prevailing prices of honey which would not be so if sound principles were applied.

The following officers were elected: President, John N. DeMuth, Pembroke, N. Y.; vice-president, J. Roy Lincoln, Niagara Falls, N. Y.; secretary-treasurer, William Vollmer, Akron, N. Y.

It was also decided to hold a field meeting and basket picnic at the apiary of the president the first Saturday in August, 1915.

William Vollmer, *Sec.*

National Beekeepers' Association

A preliminary announcement of the annual convention and official meetings of delegates from affiliated societies, to be held at the Auditorium Hotel, Denver, Colo., Tuesday, Wednesday, and Thursday, Feb. 16, 17, and 18, 1915. It is to be held jointly with the meeting of the Colorado State Beekeepers' Association.

HOTEL RATES.

Room without bath, single, $1.00 per day and upwards.

Room with bath, single, $1.50 per day and upwards.

Excellent café and meal service may be had. The hotel is convenient to all street car connections and adjacent to railroads.

The convention apparently will have ample, comfortable quarters with a large assembly hall, reception room, committee room, etc. The reception room will doubtless be used as an exhibition hall.

NOTICE TO DELEGATES.

The secretary has mailed to each affiliated association delegates' cards, to be used as credentials. It is absolutely essential to send the original direct to Mr. George W. Williams, Secretary, Redkey, Ind., on or before Feb. 1.

The program will consist of official executive meetings and of lectures, demonstrations, etc.

PROGRAM.

Tuesday, Feb. 16.

9:30 A.M.—Meeting called to order and organization of the convention, appointment of committees, presentation of credentials, report of Credentials Committee, and announcements and invitations.

1:00 P.M.—President's report

Transaction of business which shall regularly come before the session.

Papers.

8:00 P.M.—General session of the association for the reading of papers and for discussions.

Wednesday, Feb. 17.

9:00 A.M.—Delegates' session for the transaction of business followed by the reading of papers.

1:00 P.M.—General program, continuing the reading of papers.

8:00 P.M.—Public session. At this time it is hoped to provide illustrated lectures and a program of general interest to the public. Arrangements are in hand for this.

Thursday, Feb. 18.

9.00 A.M.—Business session, concluding the transactions of the association, followed by the reading of papers.

1:00 P.M.—Session for discussions and the reading of papers to be followed by adjournment.

It may be desirable to hold a special session in the evening for those who do not leave town that night. Special arrangements for this will be announced during the convention.

PROGRAM OF PAPERS.

An effort is being made to secure the best talent in the country. Not all will be present to read their papers, but the members are assured of hearing some of the most recent and worthy remarks from the apicultural leaders on this continent.

The following titles have been received. *Expected to be present:

"Some Legal Phases of Beekeeping"—J. G. Gustin, Missouri.

"Breeding Bees"—Geo. B Howe, New York.

"Inspection in Iowa"—*Frank C. Pellett, Atlantic, Iowa.

"The Production of Extracted Honey—Apiary Inspection and the Disease Situation in Ontario"—*Prof. Morley Pettit, of Guelph, Ont.

"Migratory Beekeeping"—*E R. Root, Medina, Ohio.

"Straining and Clarifying Honey"—H. H Root, Medina, Ohio.

"Autumn Mating to Control Inheritance."—Prof. F, W. L. Sladen, Ontario, Canada.

"A Plea for Better Bees"—Jay Smith, Indiana.

"A Competency for the Hive"—*E. D. Townsend, Northstar, Mich.

"Honey Publicity"—*Geo. W. Williams, Redkey, Ind.

"The Educational Value of Beekeepers' Associations"—A. Y. Yates, Connecticut.

"Best Methods of Making Increase"—A. C. Allen, Wisconsin.

"Marketing Honey"—John C. Bull, Indiana.

"Status of Beekeeping in South Carolina"—Prof. A. F. Conradi, South Carolina.

"What the Montrose County Beekeepers' Association Has Done"—*Prof. J. J. Corbut, Colorado.

"Changed Conditions"—J. E. Crane, Vermont.

"Two of Europe's Greatest Beekeepers: Thos W. Cowan and Edouard Bertrand"—C. P. Dadant, Illinois.

"Beekeeping Costs."—Wesley Foster, Colorado.

"What the County Association Can Do in Cooperative Buying"—Robert E. Foster, Colorado.

"Selling Extracted Honey"—Elmer Hutchinson, Michigan.

"The Pollination of Fruit Bloom"—John H. Lovell, Maine.

"Opportunities and the Farmer Beekeeper"—J. B. Merwin, New York.

"Agricultural College and Beekeeping"—*Prof. Frederick Millen, Michigan.

"Cuban Conditions"—D. W. Millar, Cuba.

"A Glimpse at Florida; Her Beekeeping and Her Bee Flora"—E. G. Baldwin, Deland, Fla.

"Development of the Honey Market"—*Dr. E. F. Phillips, Washington, D. C.

"Pennsylvania Beekeeping"—*G. H. Rea, Ohio.

"Cooperation Among Beekeepers"—J. W. Stine, Iowa.

"Cooperation *vs.* Competition Between State Associations"—*J. H. Stoneman, of Idaho.

"Advertising Value of Apiarian Exhibits at Fairs"—George W. York, Idaho.

The following have promised papers the nature of which is not known:

*Prof. C. E. Bartholomew, Iowa; E. J. Baxter, Illinois; *J. M. Buchanan, Tennessee; *E. G. Carr, New Jersey; *Prof. Francis Jager, Minnesota; Allen Latham, Connecticut; Frank Rauchfuss, Colorado.

The Committee on Local Arrangements, of which the chairman is Mr. Wesley Foster, of Boulder, Colo., announces that a large attendance is anticipated. In his department notice will be found concerning reduction of rates on the certificate plan for points presumably west of Chicago. Those attending the convention should inquire concerning rates of their ticket agent.

For the entertaiment of the guests at the convention, the Committee on Local Arrangements has made the following suggestions: That time be devoted to sightseeing while in Denver; and that a banquet be a feature of our entertainment, at which honey cookery will be introduced. Presumably at this banquet will be distinguished guests from the State of Colorado, including, it is hoped, the Governor.

Throughout the convention the committee has arranged for luncheon parties of groups of our members, so that the acquaintanceship may be enlarged as far as possible.

The Colorado Agricultural College weekly bulletin, sent to all the country papers of the State, is being used to promote the interests of the association.

Mr. Foster has further planned for the 17 county inspectors of Colorado to be present. This will mean a session devoted to apiary inspection at which all inspectors and those interested in this phase of apiculture will attend.

As usual, a group photograph will be made.

Special provisions are being made and entertainment provided for ladies in attendance.

Exhibits will be in charge of a custodian. Probably some of these demonstrations will be held at the warehouse of the Colorado Honey Producers' Association, Mr. Frank Rauchfuss in charge.

Among the distinguished and scientific guests, it is hoped that the State Entomologist, Prof. C. P. Gillette, and President of the college, Dr. C. A. Lory, will favor us with addresses. Professor Gillette is in charge of the inspection work of the State, and is therefore vitally interested in beekeeping projects.

For those having lantern slides or illustrated lectures, a stereopticon will be arranged. It is desirable that those wishing the use of the stereopticon communicate directly with Mr. Wesley Foster, Boulder, Colo.

The program has now become so extended that the sessions will be divided into sections whereby it will be possible to fully carry out the plans. This will eliminate the somewhat tedious executive details from the general sessions for the purpose of reading papers and the discussion of subjects concerning beekeeping. Complete details of the program, arrangements and division into sections will be available at Denver, Feb. 16.

There will also doubtless be evening programs of interest to particular groups.

It is suggested that an informal evening in the nature of a smoker be held for sociability and general discussions.

BURTON N. GATES, *Pres.*
Amherst, Mass., Jan. 14, 1915.

Pennsylvania Meeting.—The 11th annual meeting of the Pennsylvania State Beekeepers' Association will be held in the Capitol Building, Harrisburg, Feb. 23 and 24, 1915. An interesting program is in preparation. Everybody invited. Prominent speakers from other States are expected to be with us. The Legislature is in session at the same time. You can't afford to miss this meeting.

H. C. KLINGER, *Sec.*

Special Car Secured for the Denver Meeting.—A special tourist car or more if necessary has been secured to accommodate the delegates and visitors to the National Association meeting at Denver. The routing is over the Burlington railroad, starting from the Union Station, Chicago, at 11:00 o'clock p.m., Sunday, Feb. 14, and arriving in Denver at 7:30 a.m. Tuesday morning in ample time for the meeting. The fare between Chicago and Denver is $22 75 each way. Lower berths are $3.00, and they will accommodate two persons at the same price. The upper berths are $2.40. The sleeper will be ready about 10:00 o'clock. I would advise you to buy your tickets at your home town clear through, as you will save this way in most cases. If you are going to the coast, you can have your ticket routed this way, and a one way ticket to the coast will allow stopover in Denver for three days, if your ticket bears the full tariff limit. Be careful and arrange this provision, or you may not get the full time.

In reserving berths, write to A. J. Puhl, General Passenger Department, Burlington route, Chicago, mentioning that reservation is desired in the beekeepers' special car.

GEO. W. WILLIAMS, *Sec.*
Redkey, Ind.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

The Production of Comb Honey

The following paper was read by Miss Candler at the Wisconsin State Beekeepers' meeting:

To begin with, I aim to have everything ready so that when the flow begins I will have nothing to do but yard work. The supers and sections are prepared in the winter. I use full sheets with bottom starters. A Boyum foundation fastener is my favorite of five different fasteners.

One super for each hive contains one or more bait sections. If I have enough of them I put in four drawn sections, placing them near the corners in the row next to the side row, first breaking down the drawn cells pretty well,

THE BOX-HIVE APIARY MENTIONED IN MRS. KILDOW'S ESSAY

ANOTHER VIEW OF THE "BOX" APIARY

as it makes a better looking section when completed.

I begin to put on sections usually about raspberry bloom, depending somewhat upon weather conditions and prospects for a flow. If the colony is very strong two supers are given at once, placing the bait section super on first; if not so strong, only one is given, and those too weak for sections are given drawn extracting combs.

As soon as the lower sections are fairly well drawn out and filled, the super is raised and an empty one put under. Always an empty section super is kept on top until near the close of the flow, when bees must seal and finish what they have on the hive.

As soon as completed, except possibly the corner sections, the super is removed and placed on top of the hive or near its entrance for the bees to run out and crawl into their hive. If there is any danger of robbing a mosquito-bar bee-escape is used. I sometimes use a Porter bee-escape, but the mosquito-bar works quicker.

I pick out the unfinished sections in a nearly completed super and put them back on a hive to be completed. I also sell some such sections as bulk comb honey.

Comb honey production has an advantage over extracted honey production in that it requires less heavy lifting. A comb honey super or case is only about half as heavy as a super of extracting combs. It has a disadvantage in that colonies run for comb honey are somewhat more inclined to swarm; with proper watchfulness and care, however, this swarming may be forestalled if not entirely prevented.

MATHILDE CANDLER.

Cassville, Wis.

◆

Restriction in Introduction Plan?

Evidently referring to the December number of the Bee Journal, page 407, D. E. Lhommedieu writes:

"I just read your 'Introduction' article. You did not follow the direct plan as you waited one day, which is the reason of the failure.

"If the new queen is smoked as per Mr. Miller's plan, before they in any way miss their own queen, the smoke fixes things so the bees never know the difference between the old and new queen." D. E. LHOMMEDIEU.

Colo, Iowa.

There is no doubt that Mr. Arthur C. Miller claims success when a new queen is given immediately upon removal of the old; for he says the introduction may be made without removing the old queen at all. But if the method is to be confined to colonies not previously queenless its use would be greatly restricted. It would be completely barred from those numerous cases in which a colony has been found queenless, and a queen ordered by mail.

But is there not some mistake as to Mr. Miller thus restricting it? In Gleanings in Bee Culture for June 1, 1913, page 370, where Mr. Miller first publishes the plan, he says: "It makes no difference how long the colony has been queenless, whether just dequeened or so long that laying workers have infested it."

◆

Apicultural Education

The beekeeping sisters will be interested to know that the writer of this 1st prize essay is the wife of the efficient foulbrood inspector for the State of Illinois. It was read at the Illinois State Beekeepers' convention, 1914.

It would be expensive business to make hives such as shown in the pictures, for nowadays lumber as wide as 12 inches comes high. Just think of the size holding a trifle more than 2 bushels!

"Beekeeping as a business requires talent, and comparatively few persons succeed in making it profitable as an exclusive line.

"This is not the fault of the business, nor the locality, but of the men. It looks so easy that men are not willing to take the necessary time to become fully familiar with the business, as they would in other lines.

"Our best and most successful beekeepers are those who have given apiculture special study, and it behooves us to form organizations to awaken interest on the part of the beekeepers. One great object of these organizations, or field meets, is to glean from our up-to-date beekeepers knowledge which they have acquired by long experience. By conversation with them we may fortify ourselves against many errors.

"It is surprising what a diversity of hives, utensils and methods are to be found among beekeepers. At present there is an apiary near Fancy Prairie that has 22 colonies of bees, all in old "gums." These "gums" are made from 12-inch boards, are 3 feet high, and kept on benches about 20 inches from the ground. This yard is near the road, but would attract attention only by its old-time appearance. If this man secures honey enough for his own household he is doing well.

"In another locality we find a yard of 250 colonies in up-to-date hives. A well arranged yard with system and modern tools for work, a good honey house and work shop. This man realizes a handsome sum each year from his bees, and keeps them for profit. Now where is the difference? Not in the location, nor necessarily in the bees, but in the beekeepers themselves. One man, not keeping abreast with the times and the other a reader of bee literature, an investigator and ready to profit by others' experience.

"Education along the line of good

hives, good location, ventilation, shade, sunshine and methods of handling are as essential as a good strain of bees. And these as well as bee diseases are topics of discussion at our conventions and field meets.

"The most important thing required is educational work. Many practical beekeepers who are keeping bees for commercial consideration, pay little attention to disease until it is in their own yard. They hardly know what it looks like, and often before they are aware of it, the disease has gone through a large part of the apiary.

"When the beekeepers come to understand the serious nature of these diseases, to recognize them and the proper methods of treatment, a great improvement in apiculture will be made. Until a desire to understand beekeeping is awakened, and the beekeepers are anxious to examine the brood-nests of their hives, and learn to care for the various diseases, it is imperative that there be authority to compel proper attention.

"With conventions, field days, bee literature, and such men as Dr. Miller, N. E. France and C. P. Dadant to divide knowledge with us, and good practical application on our own part, we should make rapid strides toward profitable beekeeping."

[MRS.] A. L. KILDOW.

Putnam, Ill.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

California State Beekeepers' Meeting

The annual meeting of the California State Beekeepers' Association was held at the Y. M. C. A. Building in Los Angeles on Dec. 16 and 17, 1914. There was a fair attendance, about 100 members being present.

The time was mostly devoted to business, and considerable enthusiasm was shown among the beekeepers, owing, no doubt, to the pleasing prospects already shown by the weather conditions. There have already been fine rains. And as the winter has begun so promising, we hope for a honey crop the coming season. The most interesting number on the program was Dr. A. J. Cook's address on "Honey as a Food." As all the beekeepers of the country know Dr. Cook, it is only necessary to say that the Doctor spoke in his happiest vein.

At the election of officers Prof. Willis Lynch, of Berkeley, was elected president; A. B. Shaffner re-elected secretary; Messrs. Gilstrap and Allen re-elected on the Executive Board, and Harry K. Hill, of Willows, Glenn Co., elected as a new member of the Board. Glenn county is in the northern part of the State. This with the new president in the north also, and one member from the central, gives a majority of the Board now from the north. This is as it should be. We have had the majority in the southern part of the State for a long time, so it is only fair to divide.

It was decided to hold the next annual meeting in San Francisco.

◆

M. H. Mendleson.

This month we give Mr. Mendleson's letter describing his home apiary. Mr. Mendleson needs no introduction to any but the new members of the beekeeping world, being a man of national fame as one of the largest, if not the largest, beekeepers of America:

"Attached are two photographs of my home apiary near Piru, Ventura Co., Calif. It now contains near 700 colonies of bees in prime condition for winter. It was located in the spring of 1895 on rough brushy sidehill land; on the most of it a wheelbarrow would tip over with a load of honey unless set carefully, consequently I terraced it in 1898, 1899 and 1900. Working among the bees, I had to work mostly evenings and sometimes the main part of the nights, to grade with pick and shovel. These terraces were made about 14 feet wide, and about 350 feet long. Two rows of hives are set in each terrace, facing from the alleyway in pairs, a numbered stake between each pair, and an individual record kept of each colony. All queens are replaced, every year or two, from the best Italian stock that can be gotten.

"The lay of the grounds and the manner of terracing are such that there is no confusion of bees from monotony. These grounds are kept clean, costing me over $100 annually to keep the weeds down. There is a great advantage in keeping an apiary clean and orderly, causing greater freedom and ease and pleasure of work, not as much loss of queens and bees from vermin, and almost entire freedom from the dangers of mountain fires. Great mountain fires have raged, surrounding nearly all of my apiaries, and only one colony of bees has been lost from fire. This one colony was a swarm that went into a pile of hives outside the apiary proper, and this would not have been lost had not my helpers neglected to keep the weeds down surrounding this pile of hives.

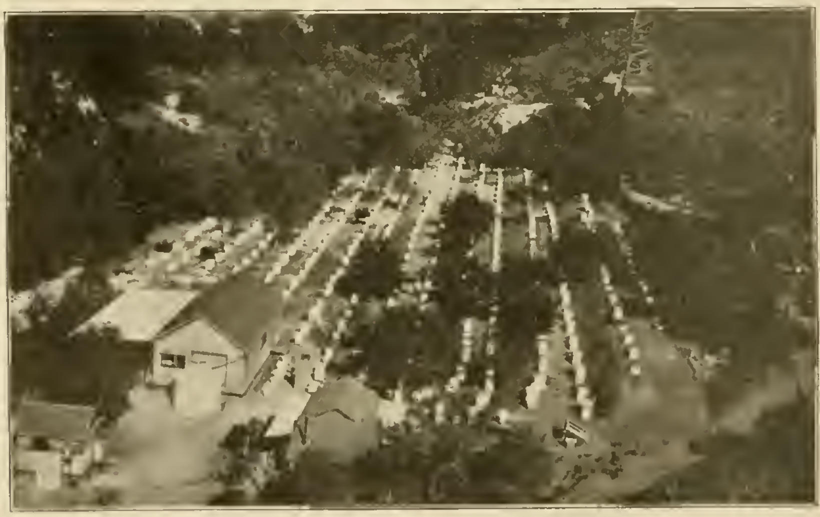
"This is a scenic canon, cheerful surroundings and healthful, and an ideal place for bees following our wet seasons. Mr. Ernest Root (many years ago) wrote a descriptive article of this apiary and location, and that *gem of manhood*, the late John H. Martin (The Rambler), gave an article of me in Gleanings in Bee Culture in 1893.

"Providence permitting, the first good season I have I shall run this apiary up to 1000 colonies or more, to test the range in a good season.

"I am using an 8-frame Root power extractor in this apiary, and I intend to put in another one and run 2 power extractors instead of one in this apiary alone, as the past season nearly three tons of honey were extracted within eight hours, the honey being thick the extractor could not keep up with the men, or there would have been near the four-ton mark for that day's work, as a test of what could be done in one day of less than 10 hours' work.

"In an extra photograph you will notice a row of cone-top galvanized iron seven-ton honey tanks. I have five of this capacity alone, made from 20-pound iron. Cone or closed top tanks prevent vermin and dust from dropping in. They are ventilated, and the honey always thickens much more when standing a while in these tanks. Cloth-top tanks are subject to draw in much of the dews.

"For the reason of the cool cloudy season preventing good secretion, and preventing bees from working in the



700 COLONY HOME APIARY OF M. H. MENDLESON AT HIS PIRU HEADQUARTERS
Hives are kept in pairs and individual record of each colony kept.
Notice how neat everything is.

last part of the season, I filled only part of these tanks, as the crop was short.

"You will notice a person sitting by one of these tanks. Well, one morning I arose to find a tramp in front of my door, who informed me he had slept over night in my barn. I set him to work. You are aware that tramps are naturally born tired; well, he was tired the whole season, and had a natural fear of the water. Hereafter I shall try to hire tireless helpers and such as are fearless of the water. I am glad I was not born tired. M. H. Mendleson.

"Ventura Co., Calif."

ANOTHER VIEW OF THE MENDLESON APIARY

Seven Ton Cone Top Honey Tanks of M. H. Mendleson

BEE-KEEPING IN DIXIE~

Conducted by J. J. Wilder, Cordele, Ga.

Wants to Produce Chunk Honey

"Mr. Wilder:—I am just starting in the bee business and think of producing chunk honey. How do you fasten foundation to the top bars and what size of frames do you use?

"Mojave, Calif. E. F. Evans."

I use a foundation fastener of my own invention which works in the same way as does the Parker fastener for sections. It is made very strong, although usually a light stroke or pinch is sufficient to do the work. Less than three-sixteenths of an inch of the foundation is taken up in fastening, so it is very economical, simple to manipulate, and it does the work quickly. Each season we put foundation in over 8000 supers. Foundation is also put in all our brood-frames with it. We much prefer it to the wedge plan. Many are in use all over the country and giving perfect satisfaction. I use the regular standard size shallow extracting frames 5⅜ inches deep.

Beekeeping for Farmers

The average beekeeper in Dixie makes farming his main line of business and beekeeping is a side issue. Our industry in the farmer's hands is almost unknown except as we write them up, so we are unable to reach the mass of them. This is to be regretted because the smallest farmer beekeeper should be enlightened to the point where he will use the modern hives and adopt the methods of the more extensive beekeeper.

The photograph shows a busy farmer and his apiary. In appearance and equipment it is perhaps not surpassed by apiaries of many more extensively engaged. He has a model farm apiary. At first he only had a few bees in box hives which he transferred into 8-frame dovetailed hives, using the regular full depth bodies for storing. The bees swarmed and increased the size of his small apiary. He added a few more colonies by buying box hives and transferring. The supplies were all bought from the returns of the bees and he has also a well equipped honey house. He is a very busy farmer, but finds spare time to care for his bees.

By raising extracted honey, swarming is reduced to a minimum. Supplies are bought in the flat and prepared during the slack farm season. Honey is also marketed at this time, making beekeeping an ideal side issue and reducing expenses to a minimum.

There has not been a season when the average per colony was less than four gallons of honey, which sold readily at $1.00 per gallon, an income of over $4.00 per colony each season. This man's ability is not above that of our average farmer, neither is his location for honey any better.

Dear Dixie reader, there is not one of you who does not have a relative or a friend who is a farmer who would be interested in this article. Make out a list of those who you know would be interested and send it to our editor, requesting him to send each one a copy containing this article, and I am sure he will be delighted to do so. In this way you will help some one who is now discouraged over the panic conditions, and bring to his attention the possibility of a new industry.

Apiary of J. R. Durden, Macon, Ga.

Mr. Durden is a "swamp" beekeeper and says that bees do best near great swamps. He has a number of apiaries similar to the one located on the Ochinulgee river, which has a large acreage of open and dismal swamp along its banks containing many different kinds of honey plants, giving him a very good honey flow throughout the season.

Mr. Durden believes in keeping things neat about his apiaries, and is one of the few in our State who are making beekeeping their sole business.

Notice the style of covers he uses. He buys most any kind of cheap lumber, so it is bee proof when done; then to make it water proof he covers it with rubberoid, or some other prepared paper roofing, nailing it well at the ends, and merely tacking it at either edge. This allows a free current of air to pass under, and no shade-board is needed.

* * *

Tourist Beekeepers In Florida

It is surprising to meet so many beekeepers from the North wintering in Florida, especially is this true at Bradentown; together with those who are engaged in beekeeping in this section, it is no trouble to call a meeting and have a large attendance, besides the regular weekly meetings when they collect about street corners and front porches.

At once some serious problem about our business is under discussion. Many such tourists have their own winter cottages; some rent rooms and live as economically as they desire. Some get jobs and work part or all the time while they are here, and some have apiaries here and spend much of their time with their bees. Others have small groves, while still others have gardens and raise vegtables.

Many are often seen on docks fishing or out on a pleasure trip in a launch up and down the rivers and bays, spending much time on different islands. More and more come each winter, and if one fails to come down one winter you may be sure he will be back the next.

A number of these will soon have an extensive bee business at this end of the line as well as the other, dividing their time equally. This venture is panning out well, and how it is done will soon be made known.

Bradentown with its attractive winter climate is undoubtedly an excellent place for beekeepers to spend a profitable vacation. Beekeeping is yet in its infancy in this section.

A GROUP OF TOURIST BEEKEEPERS WINTERING AT BRADENTOWN, FLA

A FARMER BEEKEEPER IN HIS APIARY

APIARY OF J. R. DURDEN IN GEORGIA

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

National Comb Honey Grading Rules

The National Beekeepers' Association adopted grading rules for comb honey at the Cincinnati convention in 1913.

These rules have been published in the bee journals, but it is doubtful if they have been used to any great extent throughout the country. The writer is aware that upon a casual reading of the rules, the average beekeeper will gather that there are a numberless set of different grades. This is very nearly true. But that is not saying that every beekeeper who grades by these rules will have numberless grades. As an actual fact, he will have not more than three or possibly four.

If the beekeeper will grade his honey carefully according to the rules, each case will be uniform in the make-up of that case, so far as weight, color of honey and finish is concerned. He will have, if he is an average beekeeper, no extra fancy comb honey at all. This grade is illustrated in Fig. 1, which is just as the name implies. There is enough of this honey produced so that there is justification for the grade.

In Fig. 2 is shown a case of fancy comb honey. No attempt, of course, is made to show the color of the honey, or cappings, or the weight. These items would be impossible to show by pictures, and it is not necessary.

Fig. 3 shows one side of a case of No. 1 comb honey. This honey is slightly off in finish, but it is No. 1 in all that the name implies.

Figure 4 shows one surface of a case of No. 2 comb honey. This honey is marketable and includes honey that, under Colorado rules, would be called cull honey. Cull honey is not a commercial shipping honey, while this honey that has been classed as cull is worthy of the market. In fact, such honey as this No. 2 is quickly picked up on the big markets. Its ready sale is testimony enough that it is not cull stock, and should not be so classed.

The greater bulk of any one beekeeper's crop will be made up of fancy, No. 1 and No. 2. According to his expertness, will he be able to reduce the number of cases of No. 2 and increase the numbers of first grade and fancy.

With the enactment of the Federal Net Weight Law, it will be necessary to put sections of uniform weight together in cases, as the rules specify this and the law makes it advisable. In this way, Fancy White, Fancy Light Amber, Fancy Amber, etc., would have each section stamped with the weight, while on the end of the case would be stamped the grade and color and actual net weight, if desired, or the heavy, medium, or light could be used.

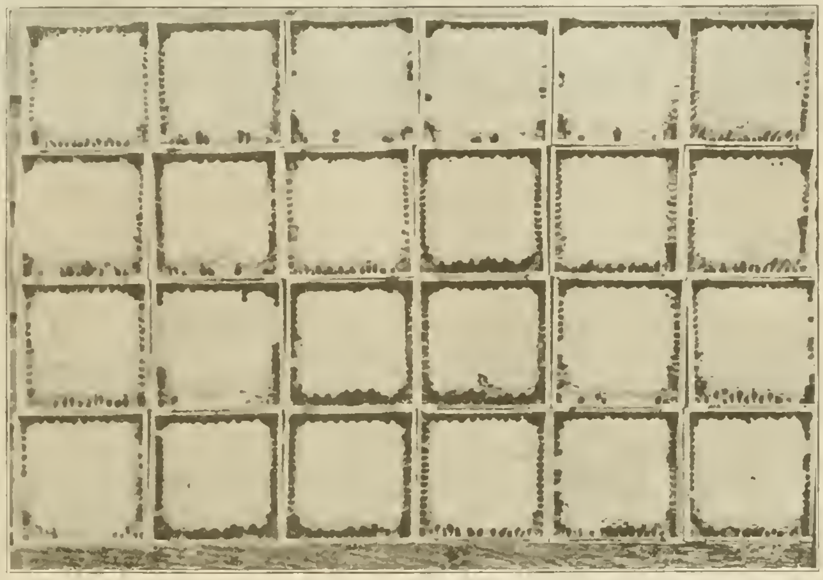


FIG. 2—FANCY, NATIONAL RULES.

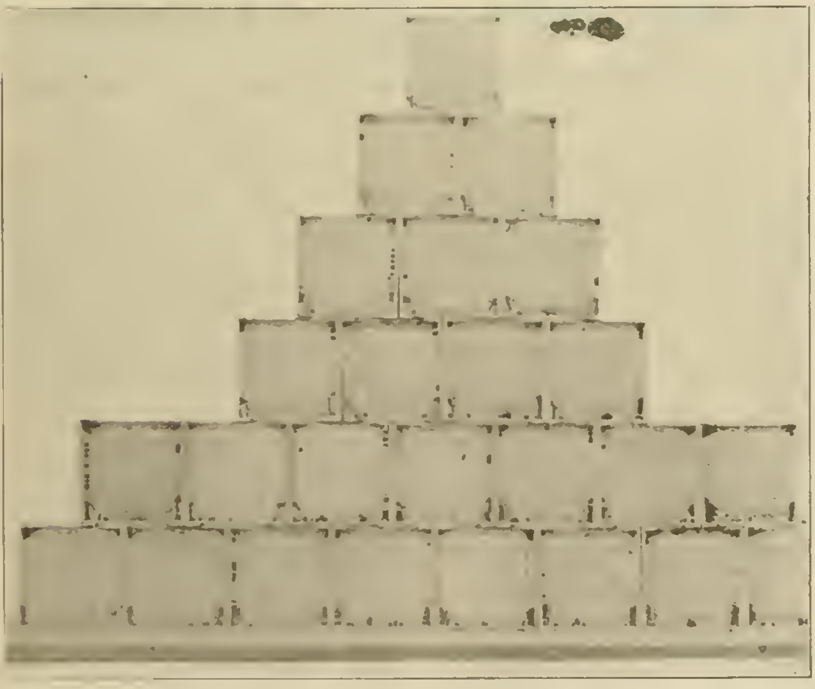


FIG. 1.—EXTRA FANCY (NATIONAL RULES

The outstanding advantages of the rules are that amber honey does not have to be sold at a No. 2 price if it is fancy in finish and quality.

It is possible to secure the maximum value for each section of honey if it is very near in finish, color and weight to every other section in the case.

As beekeepers gain more knowledge of the demands of the market and become more careful in grading and packing, the rules will be more fully appreciated. It is not argued that they are perfect. The writer thinks there are some minor changes desirable, but the principle upon which the rules are founded is correct.

These rules do not give opportunity to the buyer of a car of honey to "grade up" the lot by re-packing. For this reason, it will be hard for some beekeepers to make sales if grading by these rules. One's market, of course, must be studied and what is best for each one followed. But the trend will be toward this careful differentiation of different finishes, weights and color of comb honey.

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SOME OF COLORADO'S COUNTY INSPECTORS
1. R. C. Clary, Ft. Morgan 2. H. E Ingalls, Ordway. 3. S. C. Wood, Rocky Ford. 4. D. C. Polhemus, Lamar. 5. E. C. Bird, Boulder. 6. O. C. Richardson, Canon City. 7. Wm Harkleroad, Grand Junction. 8. W. C Evans Ft. Collins. 9. Louis F. Jouno, Denver. 10 Chas. Hollingshead, Sterling. 11. Chas. Ceek, Las Animas. 12. Walter Martin Brighton. Other inpectors not shown are N. L. Henthorne, Platteville; S Harlss, Cortez; G. Nichols, Montrose; J. H. Gardner, Grand Valley; R. W. Ensley, Read.

Special Reduced Rates in Colorado for the National

Special rates will apply from all Colorado points to Denver Feb. 14, 15, and 16, 1915, and returning Feb. 18 and 19.

Persons desiring to attend meetings, conventions, etc., for which rate on the certificate plan is authorized from points within the State of Colorado, should be governed by the following:

On one of the authorized dates of sale purchase a one-way ticket to Denver, procuring from the ticket agent a certificate. In case agent at starting point is unable to sell through ticket. purchase to junction point and from there repurchase to Denver, procuring a certificate from each agent from whom ticket is purchased.

On arrival these certificates will be signed by the secretary of the meeting and presented to the Joint Agent. The Joint Agent, in case 50 or more certificates have been presented to him, will honor same, selling ticket to return destination at one-third the regular fare. In case of passengers who have been unable to purchase through tickets and who present two certificates, the Joint Agent will stamp both, selling ticket to junction point, and on presentation of the second certificate at such junction point, passenger can repurchase to return destination also at the reduced fare. Return tickets purchased on clergy permits at less than full tariff rate, and certificates of tickets purchased at less than 50 cents will not be recognized in computing the total of 50.

◆

The National

The Governor of Colorado (George A. Carlson) has been asked to welcome the convention to Colorado. An acceptance is expected soon.

Mayor J. M. Perkins will welcome the convention to Denver.

The Denver Convention League has secured for us the Tramway Auditorium for our larger sessions. This Auditorium is equipped with permanent projection apparatus, and is furnished to us complimentary. It is located three blocks from the Auditorium hotel where the executive sessions, committee meetings, the smaller attended sessions, exhibits and general headquarters will be located.

Attached are photographs of our county inspectors who will all, or nearly all, attend, and they are making every effort to bring a large number of beemen with them. We will have an entertainment guarantee of probably $200, as we have about $100 now. We are arranging to meet all beekeepers and visitors at the Union Station with automobiles, if we are notified of the time of their arrival three days in advance.

The Auditorium Hotel will grant us the lobby for exhibits, if we wish, and also will prepare an empty store room for exhibits if desired. Besides this we have a room about 20x30 for exhibits, and a long space under the balcony of the main convention room.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

The Weather

As previously stated, winter set in early in Ontario, following a very warm fall. December was much colder than the average; a record was set for Christmas day, the thermometer going lower than at any previous Christmas for 58 years, according to the Toronto observatory. January started in cold, but for the last week it has been moderate, although it has not been warm enough for a flight for the bees. Ordinarily we do not get midwinter flights, and, as a rule, they are not needed much when stores are good, but as the bees had no flight since early November, a nice balmy day would be appreciated.

◆

Clusters Unusually Small

Bees appear to be wintering fairly, but the clusters seem to be very small. The poor season may be responsible, but during the small buckwheat flow, the population of the hives seemed to be about normal. Perhaps an unusual number of bees were old and died late in the fall. Whatever the reason, I feel sure that the clusters are the smallest I have ever had in my apiaries at this season of the year. No doubt the bees are mostly young ones. as a lot of breeding was done while buckwheat was in bloom, and as the colonies are all very heavy with stores, possibly they will come out all right.

◆

Aster Honey

Editorially, it is stated in January American Bee Journal that I pronounce aster honey "light in color and nice in flavor." Please note that I said it is "light in body" as well, in "our locality." But, as a matter of fact, we do not claim to know much about it, as this year is the first time we ever had any surplus from it, or had hives "jammed" with this honey for winter, as is the case at one apiary at the present. Incidentally, we are

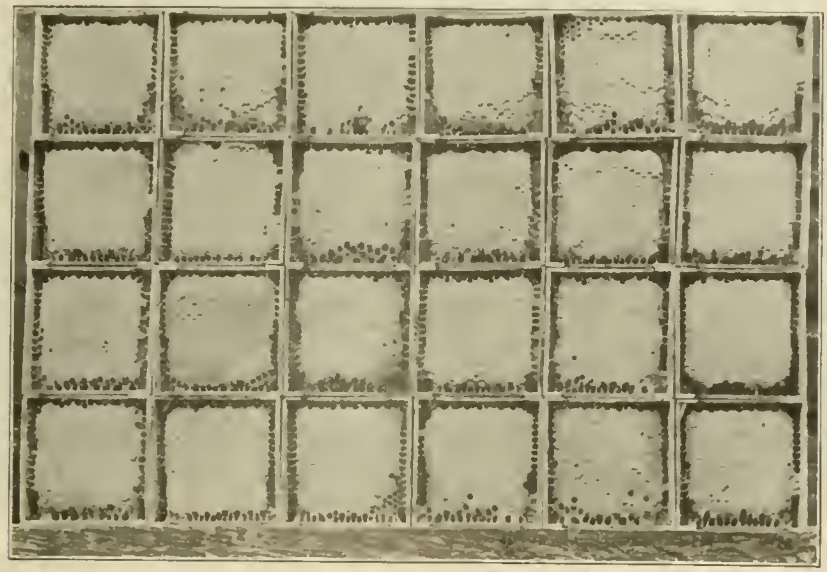


FIG 3.—NUMBER ONE. NATIONAL RULES.

doing quite a lot of thinking as to the probable results in wintering at this same yard, but we are not losing any sleep over it.

Judging by past reports of this honey, it will give us no surprise if the the loss should be heavy, particularly as the bees had no late fall flight. At date of writing (Jan. 12) the bees wintering on this honey are "dead to the world" to outward appearances, as all are completely covered with snow. This I learn from other sources, as the bees are 100 miles away, and we have not seen them since early in November, and do not expect to see them before Easter.

Importing Queens

Regarding losses in queens when shipped from Europe (page 18 of January issue), my two attempts to get queens direct from Carniola, proved a failure, the queens being dead in the first case, and in the next nearly all workers were dead, and the queens so weak that they never rallied. In the first shipment, all had died of starvation as the bees were dry and not a vestige of food left.

CONVENTION PROCEEDINGS

The Minnesota Meeting

The Minnesota meeting took place Dec. 2 and 3, 1914, at the University Farm, between Minneapolis and St. Paul. It was attended by about 150, who represented all classes of beekeepers, scientists, practical honey producers and beginners.

As at the Iowa meeting of November last, a number of addresses by learned professors gave an insight into the possibilities of progress through new discoveries.

Apiculture is most liberally sustained by the University, and this is due to the able arguments of Prof. Jager, who has the Chair of Apiculture and has devoted all his energy to the task. He has succeeded in obtaining sufficient funds for the rearing of choice Italian queens to be sold by the State, at the reduced price of 25 cents each, to the honey producers of Minnesota. But as they do not expect to be able to rear over 3000 of these queens the first season, each applicant is limited to 12 queens. This is practical work worthy of being commended to other State institutions.

Among the most interesting addresses were those by Prof. Jager himself, Prof. Bartholomew, of Iowa, on the "Law of Mendel" as applied to bees, the report of J. A. Holmberg, inspector, and a number of valuable essays by practical beekeepers such as L. D. Leonard, C. F. Greening, C. D. Blaker, etc.

The possibility of success in artificial fertilization of queen bees was cautiously hinted at by Prof. Jager. Those interested in this matter are referred to page 720 of "Science," Nov. 13, 1914. On so perplexing a subject upon which numerous failures have been recorded, we are not astonished that the experimenters wish to go slowly and be very guarded in their statements until success is achieved.

Both Professors Bartholomew and Jager warned the beekeepers against the excessive feeding of sugar syrup for winter stores, and especially of too thick syrup. Professor Jager held that the transforming of cane sugar into grape sugar by the bees, through the secretions of their salivary glands, taxes their vitality to such an extent as to wear them out promptly. This is not the first time that sugar feeding has been disapproved. The venerable editor of the "Bulletin" published by the Swiss Association, Mr. Gubler; Dr. Heberle, the German scientist, on page 347 of our October number; Dr. Carton, the noted French physician on page 128 of our April number; in fact, a host of capable writers and scientists have described the exhausting effect of sugar feeding and have sounded a note of warning. However, very few of our beekeepers use sugar syrup for feed in other cases than those of absolute necessity.

Professor Bartholomew gave out the statement of scientific experiences concerning the proportion of sugar and water that will make a syrup which neither ferments nor crystallizes by standing. This syrup is made by diluting 850 grams of sugar in 500 grams of hot water. In other words, it is a proportion, by weight, of 85 of sugar to 50 of water, or a little over 1¾ to 1.

A visit among the buildings of the University of Minnesota, both at the Farm and the headquarters, is sufficient to convince the visitor that this State is keeping in the head ranks for education. Those of our European friends who think America is only a vast country of untold resources, but not of science, should visit these immense colleges, with their numerous buildings and libraries, so quickly erected in plains erewhile inhabited only by redskin savages, now tenanted by enquiring and active students gathered from all parts of the civilized world.

PROF. FRANCIS JAGER.

When we asked Prof. Jager for his photograph to be published in this issue jointly with a report of the Minnesota State meeting, he first demurred, saying: "No one man up here has

PROF. FRANCIS JAGER, OF MINNESOTA

WISCONSIN BEE-KEEPERS 1914

done more than another. We have worked in unison, and in this way have received recognition and respect from University authorities and the State Legislature. Like ours has been, so I suppose most Universities in America are still skeptical as to the importance of the bee industry. Here is our record: First year, 1913, 25 students; second year, 1914, 70 students. What will the third year bring us at this rate of increase?

"The University has realized what the bee industry really means and has secured two more professors for 1915. Mr. L. V. France, of Madison, Wis., is one of them. The name of the other has not yet been announced. They are not going to allow the experimental work to suffer for lack of funds. The address of Dean Woods before the Beekeepers' Association Dec. 4, leaves no room for doubt on that important point. With the artificial fertilization of queens, the law of heredity and Mendel's law will be studied with a view of improving the present stock. Statistics of disease, of honey plants, of honey and wax production will be obtained and published. A bee library and museum will be established. A botanical garden is going to be laid out with a complete collection of all Minnesota honey plants. A model apiary of some 100 hives is going to be a feature of the University campus. Field meets will be held in various parts of the State. You already know of the plans for a queen-rearing yard, to furnish queens to the beekeepers at 25 cents each.

"But please give our beekeepers proper credit. They pushed the laws in favor of the bee industry; they organized; they planned; they worked; they put me there to work for them as I know how."

Professor Jager was born in Carniola, and educated in Vienna. He is a Slav, and proud of it. The country of his birth should be proud of him, for his quick gain of our language and his progressive ideas show him to be a man of action. Speaking of his race he says: "I hope the Slavs in Europe will win and get a foothold, just to teach Europe the spirit of serving the common good. So far they are a sealed book to the rest of the world."

We commend the action of the University of Minnesota to those of other States that have not yet made any steps for instruction and improvement in apiculture.

The following officers were elected at the annual meeting of the Minnesota Beekeepers' Association:

President, Rev. C. D. Blaker, Minneapolis; vice-presidents, Rev. J. Kimball, Duluth; Mrs. J. A. DeLameter, Hopkins; secretary and treasurer, F. W. Ray, Minneapolis; executive committee, L. C. Pilcher, St. Paul; L. F. Sampson, Excelsior; and Mrs. M. McCabe, Minneapolis.

Wisconsin State Beekeepers' Association Report

The annual convention was held in the Assembly Chamber, Capitol Building, Madison, Wis., Nov. 24 and 25, 1914, and was called to order by the president, Mr. N. E. France at 8:00 a.m. Visiting and getting acquainted was the order until 9:15, when the convention was called to order for business.

Officers present: N. E. France, president; Harry Lathrop, treasurer; Gus Dittmer, secretary.

About 80 beekeepers were present during the two days of the convention, including a number of ladies.

The president appointed as Committee on Resolutions and Recommendations, Gus Dittmer, E. B. Rosa and A. L. Kleeber. The minutes of the last annual convention were read and accepted.

Secretary's report was read and adopted.

The annual report of the treasurer, showing cash on hand of $218, was read and accepted.

The question-box was then taken up.

How many present here who have their bees in the cellar? Ans.—Twelve.

What is the best method for keeping moths out of extracting combs while not in use in warm weather? Ans.—Keep them on colonies. Keep paper between each two bodies, and sprinkle with sulphur. Use bisulphide of carbon and fume with burning sulphur.

Are the Italians worse robbers than the blacks? Ans.—Italians do not rob during a honey flow, and are less liable during a scarcity of nectar. They will also fight better to protect themselves. Blacks rob at any time, and are not so good to protect themselves.

What do the beekeepers here prefer, a large or regular entrance? Ans.—Almost all of the members present prefer a large entrance, from 1 to 2 inches high, the whole width of the hive, and only one entrance.

How many pounds of honey will a reasonably strong colony consume in the cellar and how many will it consume out-of-doors? Ans.—It will consume in the cellar, before putting out, from 8 to 15 pounds, but will consume more after it is put out than those wintered out-of-doors. Those wintered out-of-doors will consume more during winter, but less during spring. On the whole, they will consume more during spring and winter than those wintered in the cellar.

What is the best way to increase colonies? Ans.—One beekeeper said swarming, but most of them practice artificial increase. No particular plan was specified.

How many colonies can be kept in one place without overstocking? Ans.—It depends upon the location, climate, natural resources, etc., with which the beekeeper must make himself familiar. The difference may be such that anywhere from 100 to 300 might be kept in one place.

How can extracted honey in fruit jars be kept liquid? Ans.—Heat the jars with the honey in hot water at about 150 degrees before it granulates, leaving it in the hot water for some time.

What should be done with pollen-clogged combs? Ans.—Put them in a strong colony during the spring season. If possible, select one short of pollen, and it will clean them out for breeding purposes.

AFTERNOON SESSION.

Two papers on "How to Produce Extracted Honey" were read by the secretary, the first by Frank Kittinger, of Caledonia, and the second by A. P. Raymond, of Greenwood. These will be published later.

Dr. E. F. Phillips explained the net weight law in reference to comb honey. Net weight must be marked within the fraction; for instance, 14½ ounces may be marked 14 ounces, but must not be marked 15 ounces. One ounce should be the tare for each section. The person shipping directly out of the State is responsible for the marking of the net weight, and not the producer who may have first shipped to him. The producer is responsible only if he ships out of the State directly.

Mr. E. B. Rosa spoke on the convenience and economy of the auto truck in working the out-yards.

Dr. Phillips spoke at length on "Foulbrood, and how to know doubtful cases and treatment for same." This subject was thoroughly discussed.

EVENING SESSION.

Dr. Phillips read a paper on the subject of "Temperature and Humidity in the Wintering of Bees." This paper is too lengthy for reproduction in these columns.

This was followed by five minute talks on "Wintering" by F. Kittinger and N. E. France, from which it appeared that young queens, plenty of young bees and an abundance of good stores are the essentials for good wintering. The cellar should be all underground. Mr. Kittinger puts his hives into the cellar and winters them without the bottom-board.

Lewis Post then read a short paper on "Wintering." [This article appears in our contributions.—Editor.]

WEDNESDAY—MORNING SESSION.

The subject of foulbrood was first taken up by N. E. France, explaining the symptoms. This was followed by J. J. Angel, who gave his experience and methods used to eradicate it.

L. V. France demonstrated with maps American foulbrood, showing location and extent of the disease by counties. N. E. France then spoke on European foulbrood and how to know it.

A paper on European foulbrood by Paul Scheuring was then read by the secretary. [This paper appears elsewhere in this number.—Editor.]

A paper on American foulbrood by Gus Gust was read.

The election of officers for the ensuing year resulted as follows: President, N. E. France; vice-president, F. Wilcox; secretary, Gus Dittmer; treasurer, Harry Lathrop.

Committee on Resolutions reported the following:

Resolved, That the date and arrangement for the next annual convention be left to the Executive Committee.

Resolved, That N. E. France be recommended for the appointment of judge of the apiarian exhibit at the next State Fair.

Gus Dittmer.
A. L. Kleeber.
E. B. Rosa.

Adopted.

"A Short History of Beekeeping," by C. P. Dadant, was read by the secretary. This paper was received with much interest.

Miss Mathilde Candler read a paper on "The Production of Comb Honey." [See "Woman's Department," this number.—Editor.]

The convention adjourned at 12 m.

Gus Dittmer, *Sec.*

N. E. Faance, *Pres.*

The Quebec Beekeepers—A Trip to Lower Canada

On the 2d of November, we went to Chicago and then in the later afternoon, boarded a through train for Montreal. Reaching that city the next day, we remained overnight and, the following morning again took the train for Quebec.

If our reader possesses a map of Canada, he will readily see, by referring to it, that a trip to Quebec from western Illinois brings us 6 degrees farther north. The difference in climate is very marked.

Along the St. Lawrence River, beyond Montreal, the land is flat, irregular in fertility, interspersed with small forests of birch and pine, but very thoroughly cultivated in all fertile parts. The farms extend in a northwest direction, at right angles with the course of the big stream. As this was one of the first settled districts of North America and they had to contend with the Indians (the

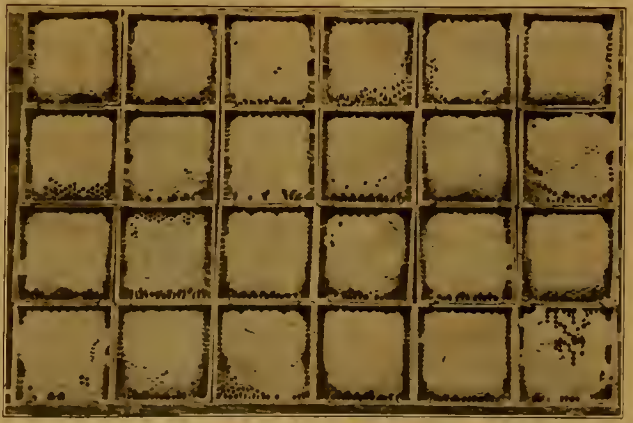


FIG. 4.—NUMBER TWO. (NATIONAL RULES.

MRS. AND MR. OSCAR COMIRE AND FRIEND IN THEIR APIARY AT ST. FRANCOIS DU LAC, QUEBEC

savages as they call them), the land was divided in narrow strips, about 180 feet wide and several miles long, and each settler built his home at the near end of his strip in close proximity to his neighbors and to the public road; thus forming a link in an apparently endless chain of villages, separated from each other only by spots of waste land or woods.

So trim and well painted are the houses that my wife thought these villages all newly built, till she was undeceived by the statement of an old gentleman who rode in the opposite seat on the train and volunteered the information that these were among the very oldest settlements in America, dating back some 250 years.

Arriving in the city of Quebec, late in the afternoon, we found the atmosphere so raw, though it was not freezing, that we were glad we had brought with us some heavy clothes. The city is built on a cliff overlooking the St. Lawrence and extends backwards down into a valley. It is fortified, but the oldest part is at the foot of the hill, where some of its streets are as narrow as some of the streets of European cities. The new Quebec is beautiful. We visited the Armory, where a few hundred volunteers were drilling and singing the Marseillaise in its native tongue, for the Quebecois are essentially French in language and traditions. But their allegiance to Great Britain is boundless and it is with great enthusiasm that they sustain the mother countries in the present European struggle.

The next morning early I called the president of the local Quebec Beekeepers Association, Mr. Verret, upon the telephone. Mr. Verret is a seedsman and a beekeeper, in Charlesbourg, a suburb of Quebec. He was delighted of our arrival and expressed it in as warm terms as come to the lips of an enthusiastic French-Canadian. He at once came after us with his automobile and we started on an excursion, visiting other beekeepers. It was delightful. The beekeepers all over the world must be of an especially hospitable disposition, for we find a hearty welcome everywhere.

The bees, of course, were in winter quarters, in the cellar, or about to be placed there. The cellars we visited are not deep. In fact they are very shallow. We thought this might cause them to be irregular in temperature and subject to atmospheric changes. But when we were told that the snow falls to a depth of 4 to 5 feet and banks against the buildings, we could understand that it is unnecessary to have deep cellars. A snow bank is better than an earth bank to protect the cellars.

The method of cellar wintering does not differ from our own, except in the length of time which the colonies pass there. Mr. Verret had one of his apiaries in the cellar once 186 days, or from the 1st of November to the 5th of May, and the bees came out in best of order. We must remark that in his locality there is very little honey except from white clover. Unhealthy or unripe honey, or honey containing an abundance of pollen grains, is rarely to be found. This is of importance in long confinement..

In spite of the cool, raw weather and the spitting of snow, we enjoyed the ride immensely. We followed the course of the St. Lawrence for 15 miles and passed by the Falls of Montmorency, the river of the same name plunging from a height of 240 feet. But these falls, like many others have been spoiled by industrial use. A dam has been built and most of the water is utilized to produce electric power, just the same as with the Des Moines Rapids of the Mississippi here.

Every home in lower Canada is provided in winter with storm doors and storm windows, to keep out the cold. Between the two sets of sashes, they almost invariably have a set of lace curtains, with another pair of curtains on the inside. This double pair of lace curtains gives a most cosy appearance to the homes. There is so little soft coal used and the smoke from hard coal or wood is so incon-

ANOTHER VIEW OF THE COMIRE APIARY

siderable that the paint on the homes looks as if it had just been applied and everything looks new.

We give two photos of Mr. Verret's apiary. This gentleman is a beekeeper of long experience. He has been for years a subscriber of both the American Bee Journal and Gleanings and has these magazines in bound volumes carefully treasured. His library is mainly bee books.

His experience with the Italian bee, on some 20 colonies, would indicate that the lower end of the Province of Quebec is unsuited to this race, owing to the same conditions of short summer and cool nights which make it undesirable in Switzerland. The very qualities of the Italians, of rising early, coming home late, and breeding all summer seem to militate against them, in that region. They have no fall pasture and the crop is at end by the beginning of August, but the Italian bees persist in breeding plentifully until fall, so that they go into winter strong but destitute.

But this condition does not prevail through the entire Province. In the western counties which we visited later, for instance at St. Francois-Du-Lac, where the secretary of the provincial association, Dr. Comire, resides, there is a well defined fall harvest, from buckwheat, and the Italians are there considered most desirable. Everybody agrees that they are much more successful than the blacks in overcoming European foulbrood, which has not yet reached the eastern confines of lower Quebec. So useful are they, that the Secretary of Agriculture of the Province has appropriated $500 to pay for half the cost of queens purchased by the apiarists who apply to him. The only trouble has been that this sum proved altogether insufficient to provide as many queens as were desired and they are in hopes that the appropriation may be doubled or trebled, hereafter.

MR. VERRET IN HIS APIARY IN SUBURB OF QUEBEC— Photo by Miss I. Renaud

A VIEW OF THE VERRET APIARY AND BEE HOUSE
Photo by Miss Renaud.) Note the high board fence required when close to neighbors

We spent two days at Charlesbourg, getting acquainted with the French Canadians. They raise large families and I was told that the population doubles every 20 years, which compels the young generations to make new settlements in the Far West, Saskatchewan, Alberta and British Columbia. The mother of our friend had had 14 children, 44 grandchildren and told us, as to the great-grandchildren, that she was making no attempts to keep tally on them. No danger of the race becoming extinct.

Reaching St-Francois-Du-Lac, by way of Montreal, we were welcomed by Dr. Comire, who took great pleasure in making us acquainted with everything that might interest us, while his wife and daughter showed us as much hospitality as we had met with the wife and mother of Mr. Verret.

Without any hope of reward, except the satisfaction of helping bee culture, Dr. Comire has freely spent time and money to organize the Provincial Beekeepers' Association, to secure statistical information and to spread knowledge of progressive methods among the beekeeping farmers. That he has succeeded is shown by the strong attendance at the Montreal meeting, about 150. Since everybody speaks French, the meetings were held in the French language. I was selected as one of the judges of the honey exhibit. I had noticed that the numerous displays were exceedingly similar, both in comb and extracted honey and of very high grade. I felt it would be a difficult task to make a selection for alloting the prizes and so I made a feeble attempt to escape the duty with a joke on the danger of making enemies among the unrewarded exhibitors. But the smiling President of the Association, Dr. Lalonde, replied promptly: "That is just why we selected you. You live 1200 miles away. Why should you care?" Luckily, I was given a very good partner in the person of Mr. Beaulne, of the Ottawa Experimental Farm. Together we did the best we could, in a case of such uniform quality of exhibits.

I will not try to give a synopsis of the meetings. But it will be of interest to the U. S. beekeepers to learn that in the Province of Quebec much more attention is given to the production of extracted honey than to that of sections. Many of the producers use very large hives, 12 or 14 frames, Langstroth size, with supers of equal capacity. The crops harvested would astonish some of our warm climate beekeepers. The honey crop of 1914 of Hector Girouard, of St. Hyacinthe, vouched correct by several of his neighbors who were also present, was 6221 pounds from 15 colonies, spring count. Of this 4950 pounds was white clover and sweet clover, the rest buckwheat. He used 13 frame Langstroth hives. Mr. J. F. Prudhomme, one of the new Board of Directors of the Association and a very active apiarist, has kept a strong colony on scales during the season and has ascertained an increase in weight of 20½ pounds in 24 hours.

The Honorable Mr. Caron, Minister of Agriculture of the Province, in a verbal report which he made at the meeting, promised the co-operation of his Department in every possible way. But he complained that the statistics furnished by the beekeepers of the Province to the census were altogether inadequate, as the entire amount of honey shown in the Dominion census report for this Province was only 1500 pounds. He begged the beekeepers for more accurate statistics. Regarding this, several apiarists privately told me afterwards that they were not to blame, and that it must have been an oversight on the part of the Census officials as one beekeeper alone had reported a crop of 33,000 pounds. But such is the polite deference of the Canadians for their officials that no one had seen fit to make a reply to the Minister, by referring the error to the fault of the Census people.

An evidence of the interest taken by the Quebec government and legislature in the business of beekeeping is shown in several laws now in existence. The first concerns the inspection of apiaries. Inspectors are paid at the rate of $5 per diem and expenses and the funds are supplied out of a $55,000 appropriation set apart for agricultural organizations. There is also a law forbidding the spraying of fruit blossoms with poisonous compounds, so as not to imperil the bees which work upon them. Another regulation requires the fencing of apiary grounds which are within 30 feet of a house or a public road, with an 8-foot board fence, extending at least 15 feet beyond the limit of the apiary. The beekeepers consider this regulation as a protection to their interests, since they may keep bees anywhere provided they comply with the law. Upon the whole I believe that we of the States can learn fully as much from Canadian apiarists as they may learn from us, by comparing methods.

However much we would have liked to visit also the Ontario beekeepers during this trip, we had to forego that pleasure. We had allowed too little time for the trip and I needed to be back home by the 15th. Toronto is but a short distance from Illinois, when compared with Quebec and we will have numerous opportunities of attending their future meetings.

CONTRIBUTED ARTICLES

Wintering Bees

BY LEWIS POST.

(Read at the Wisconsin Meeting.)

MY plan of wintering has been to prepare for the strength and endurance of my bees as much as I can from early spring until I have them provided with all needed stores in October for the coming winter.

The successful wintering of bees depends primarily upon good and sufficient stores in the hive to last until honey comes again, and when I say that, I don't mean sugar syrup. Of course, sugar syrup is better than "bug juice" (honey-dew), but I affirm it is not to be compared to good honey. Shame, I say, on the beekeeper who will rob his bees of their good honey for the questionable profit he thinks there is in it, and then fill the hives with sugar syrup "dope" for them to live on through the winter.

I have always, with one or two exceptions, wintered my bees in the cellar. The cellar in which I winter them is under the house. It is 18x26 feet, with cement floor; the bee cellar proper is 12x18 feet. In that space I have at the present time 92 colonies. The remaining 11 are in the other part of the space.

All is ventilated with a 6-inch stove pipe entering the top of the wall on the south side connected with two elbows extending to the bottom of the cellar on the inside, and by a window under the vestibule and porch on the east side. That admits of a free circulation of fresh air without any undue exposure to the bees.

I have the 8 and 10 frame Langstroth portico hives and a few dovetailed ones, but for various reasons I like the Langstroth better.

The hives are ventilated by two ⅝-inch holes in the back of the lid and the open entrance. I have tried putting two thicknesses of gunny sack over the frames, thinking the draft might be too strong through the back and front of the hive, but I have not been able to discover any difference in the result.

As to the temperature of the cellar I have never given it any very serious thought, but try to keep it cool enough so that the bees are not uneasy. But to keep a thermometer in the cellar and then try to keep an even temperature is only subjecting the beekeeper to unnecessary trouble without any material benefit to the bees.

Madison, Wis.

STRONG COLONIES IN A COUNTRY OF SHORT SUMMERS, CHARLESBOURG, QUEBEC

Sugar Syrup Feeding

BY J. E. HAND.

CREDIT is due to Editor Dadant, for compiling so much valuable information in the October American Bee Journal relative to the orthodox density of sugar syrup for feeding bees, for this is a matter of vital interest to beekeepers. It is gratifying to note that the majority favor a solution of two sugar to one of water; while adding my testimony in favor of this solution, I wish to sound a timely warning against the inordinate feeding of sugar syrup of any density and for

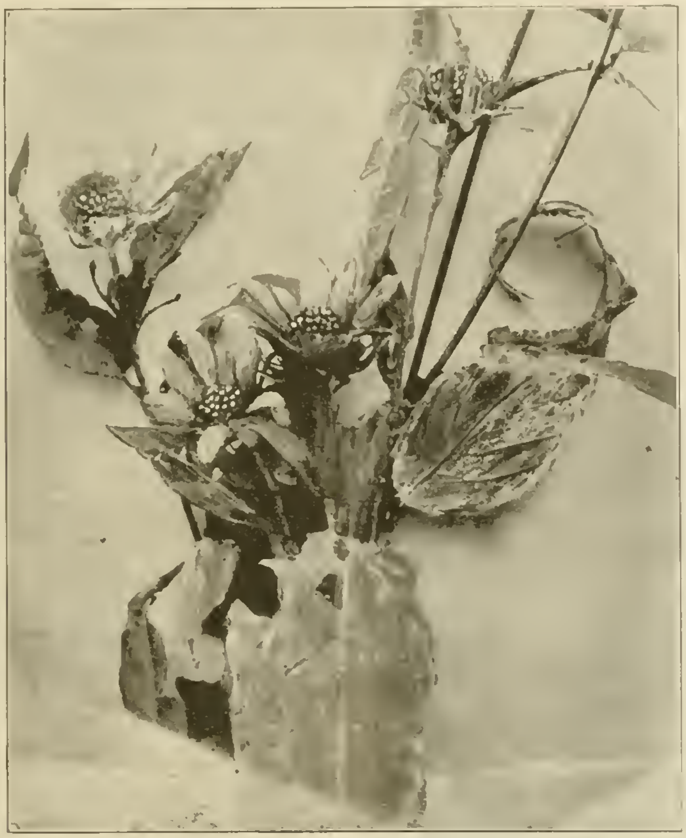


FIG. 5.—WILD SUNFLOWER

any purpose whatever except as a last resort to prevent starvation.

The pernicious practice of extracting all the honey and feeding syrup containing a heavy percentage of water is rank heresy in view of the incontrovertible fact that to expel the excessive water and invert it is the most devitalizing labor that bees can perform. Those wanting further light upon this subject should read the two articles on "Honey and Biology," pages 315 and 346, by J. A. Heberle, B. S., for these are cold hard facts from a scientific point of view.

Words of truth and wisdom emanating from such a reliable source cannot be lightly ignored, and Brother Heberle is deserving of thanks by American beekeepers for compiling so much valuable information of a scientific nature relative to the nature and food value of sugar syrup, as well as to the deleterious effect upon the bees that invert it. Perhaps few practical beekeepers in the United States have had a wider experience in feeding syrup of different density and for different purposes than myself, for personally conducted experiments along this line have consumed tons of sugar, and sacrificed the vitality and lives of hundreds of colonies of healthy bees.

While the inversion of cane sugar is undoubtedly fraught with evil consequences to bees, these influences are trivial in comparison with the lost vitality and premature death of bees when compelled to expel excessive water imperfectly diffused with sugar, by a process erroneously called "evaporation;" "evaporation" performs no part in the process of expelling water from syrup or nectar. It is gratifying to note that progressive beekeepers of today do not advocate stimulative feeding, and for the good of the industry there should be less sugar fed for winter stores. As a result for expensive and extensive experiments we have no use for feeding except as a last resort when honey is not in evidence; hence, we have an iron-clad rule to leave at least six of the best filled combs on every hive for winter stores, for in our location the brood-chamber cannot be relied upon when running for extracted honey, and we realize a greater profit from those combs than can be realized in any market in the world.

Birmingham, Ohio.

No. 2.—The Honey-Producing Plants—"Yellow Fall Flowers"

BY FRANK C. PELLETT.

WILD SUNFLOWER (HELIANTHUS.)

THERE are many species of the sunflowers, some of which may be found from the Atlantic Coast to California, and from Canada to the gulf. They are tall coarse weeds with bright yellow flowers. Large numbers of insects of many species may be found on the sunflower blossoms, in search of the nectar. Wherever these plants are sufficiently abundant, they are the source of large quantities of honey. The cultivated sunflowers are of little if any value as honey plants, but produce seed in large quantity, which is a valuable poultry food. The Jerusalem artichoke is a variety of sunflower, cultivated for the tubers, to feed the hogs. This plant grows wild in the upper Mississippi Valley States, and is commonly regarded as a weed. It is frequently referred to as a valuable honey plant.

Many of the wild sunflowers are perennials, persisting for many years when once established. They are commonly to be seen along wagon roads and railroads and on waste

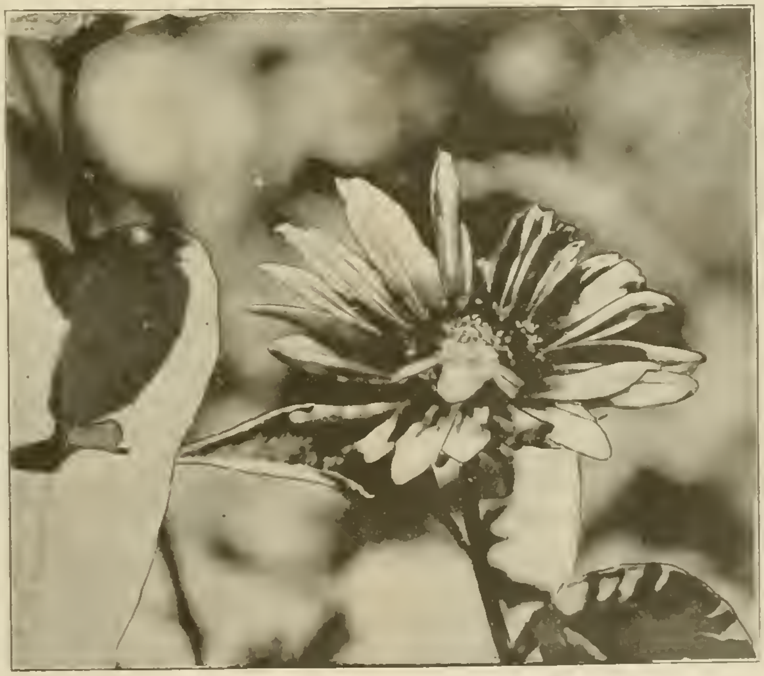


FIG. 6—BEE FLY ON WILD SUNFLOWER BLOSSOM

ground everywhere. While the artichokes are troublesome weeds in the fields, they are seldom sufficiently abundant excepting on waste land to be of importance as a honey plant.

CROWNBEARD.

There are several species of crownbeard, some of which have white blossoms. The pictures show the common, yellow flowered variety, of Iowa. It grows in the borders of open woods and other partially shaded situations. The bees seek it very eagerly, and a great humming is in evidence about this plant, when the bloom is at its height. The range of the different species of crownbeard (*verbesina*) is said to be from Pennsylvania to the Missouri river, and south to Texas. Wherever present in sufficient abundance, it is the source of a desirable quality of honey.

CONE FLOWER OR WILD GOLDEN GLOW

The cone flowers (*Rudbeckia*) are not often mentioned as honey plants, yet the bees visit them freely and apparently they are the source of some nectar. In Iowa they are very common on low ground and grow 4 to 8 feet high. The stem has many branches and a single plant will often produce a considerable number of the large yellow flowers. On wet lands these plants are frequently present in such quantity as to be an important source of bee pasturage.

Not all of the common yellow fall flowers are included because of our inability to get satisfactory photographs so that it will be necessary to come back to them later. The next installment will deal with other fall flowers, including asters, snakeroot, etc.—Copyright 1915, by Frank C. Pellett.

Atlantic, Iowa.

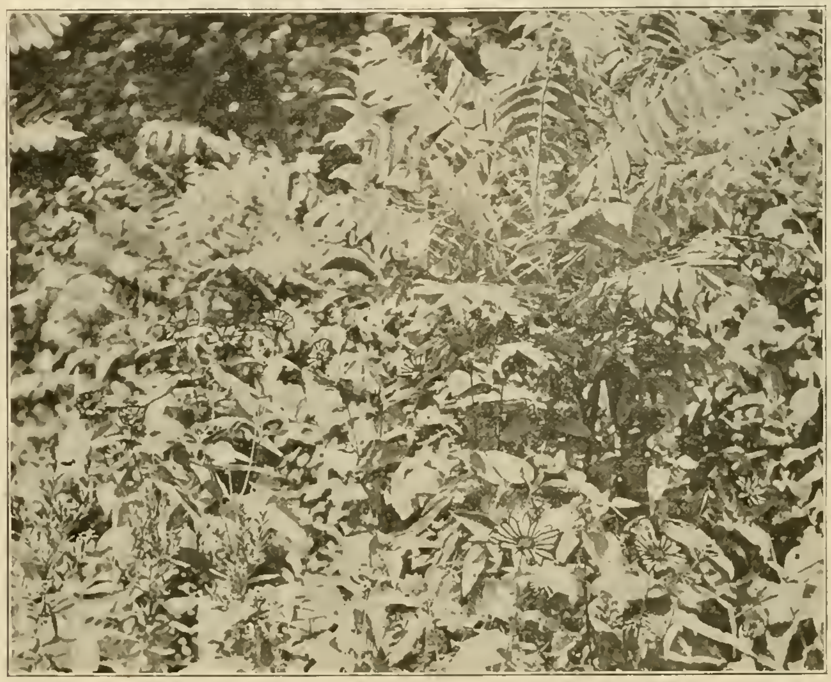


FIG. 7.—WILD SUNFLOWERS WITH OTHER PLANTS BY THE ROADSIDE

No. 2.—Sweet Clover

BY J. G. MOSIER.

Agricultural Department, University of Illinois

USES, PASTURE, HAY AND SEED.

STOCK easily learn to like sweet clover, especially when young and tender. Permanent blue grass pastures could profitably be seeded to sweet clover since this crop will furnish plant food for the blue grass and result in growing more of the latter than without the clover. Since it is a biennial, in order to obtain the largest amount of green pasture part of the field should be seeded during two successive years. After that no seeding will be necessary.

For temporary pastures sweet clover should be seeded with some other crop such as red, alsike clover or timothy, to furnish pasture after the sweet clover has seeded the second year. But little will be eaten after it blooms and becomes woody. The pasture season may be prolonged by clipping it with a mower 5 or 6 inches high sometime before blooming. This starts a new succulent growth that will afford pasture much longer. The value of sweet

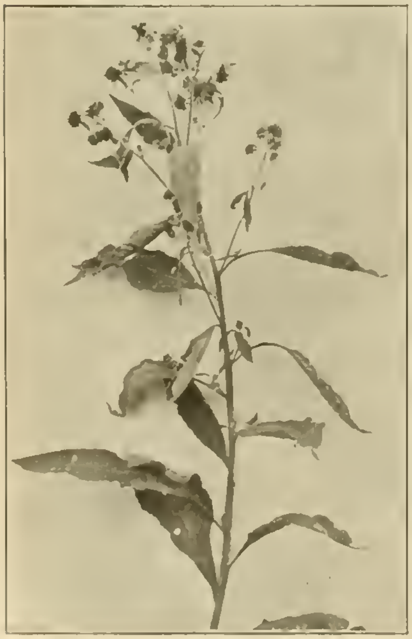


Fig. 8—Crownbeard

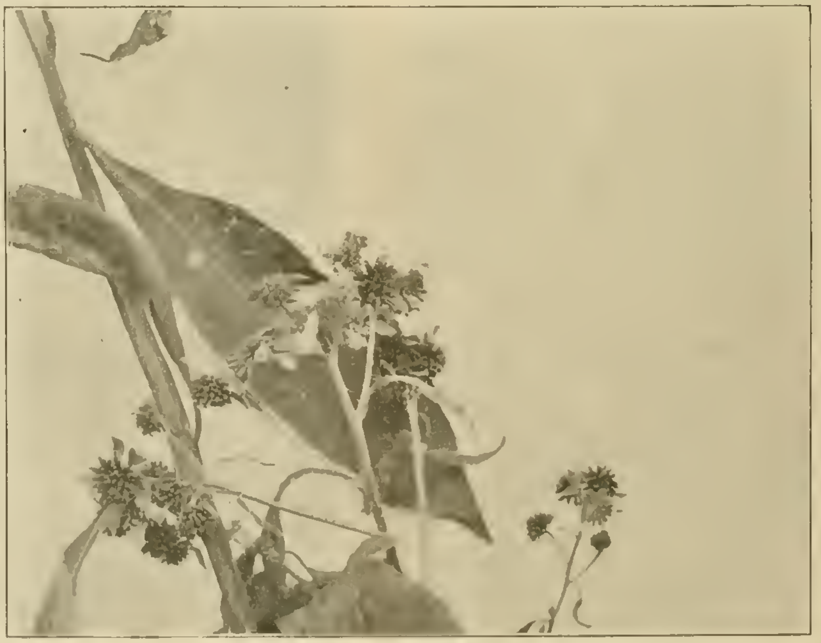


FIG 9.—FLOWAND LEAF OF YELLOW CROWNBEARD

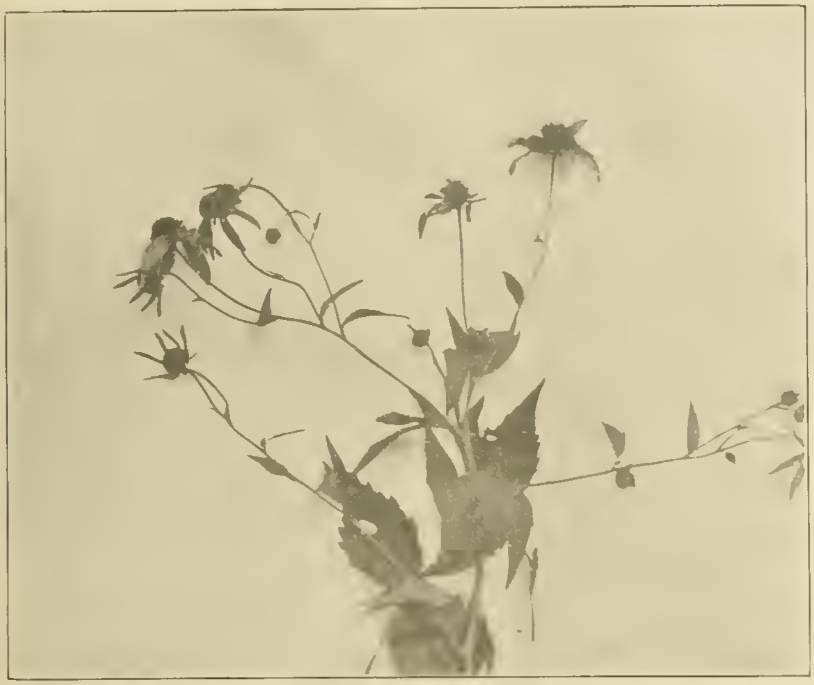


FIG. 10—YELLOW CONE FLOWER OR GOLDEN GLOW

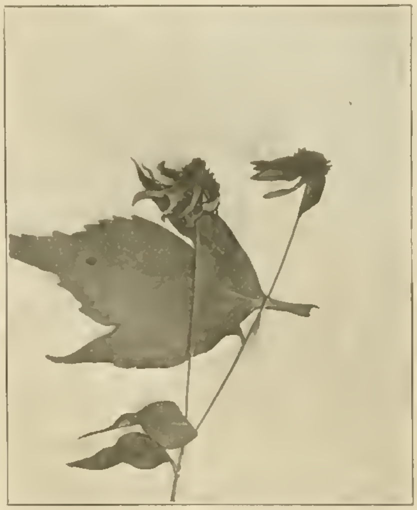


FIG. 11—FLOWER AND LEAF OF YELLOW CONE FLOWER

clover is being demonstrated on many farms and some experiment stations. The Iowa station has carried on some experiments, using sweet clover as pasture for hogs and the first season's growth has proved to be about as good as alfalfa.

The following extract from a letter will show how cattle thrive on this much abused plant: "I had a very fine stand this season following a barley crop. Sixty days after cutting the barley, there was a growth of from 15 to 24 inches, I put 29 steers in this field that were just common feeders in only fairly good condition, purchased in Kansas City. They were fed nothing else, but had plenty of water and salt, and in 55 days the average gain was 154 pounds each."

The Wyoming Experiment Station found that lambs fed on alfalfa made an average gain of 34.4 pounds each in 14 weeks, while on sweet clover another bunch of lambs made a gain of 30.7 pounds for the same time.

As a hay crop, sweet clover is proving very valuable. Stock eat it when cured as well as when green. During favorable seasons a hay crop of a ton or more may be cut the first year. One man writes me that his first year's growth made 2½ tons of hay. A crop of hay may be cut during the second year and the second crop allowed to seed or the first crop may be allowed to seed. In cutting the hay crop during the first season's growth, there is no danger of injuring by cutting too low, but for cuttings made during the second year, the mower should be run at least 4 inches high. New buds or sprouts do not start from the root crown as in the case of alfalfa after being cut once. The new growths start from the stubble, and this must be left sufficiently high to give room for the new buds. The root crown normally furnishes but one series of shoots, and if cut too low the second crop will be a partial or total failure. There will be no objection to cutting a second crop of hay if sufficient growth takes place. This will damage the seed crop, however.

Cut the first crop before it blooms and the second crop before it becomes too woody.

Mr. Graham, of Rochelle, filled a silo with the first year's growth of sweet clover, and fed it to steers together with corn. During the first 30 days an average gain was made of 90 pounds per steer.

The yield of sweet clover seed is usually higher than that of any other clover, being from 3 to 16 bushels per acre, and may be obtained from the first, second or possibly a small yield from the third crop if the season is favorable. To obtain the best seed crop it is necessary to cut a crop of hay or clip it when 18 or 20 inches high. In handling the seed crop it can best be done by harvesting with a binder and shocking as in the case of oats. The time of cutting for the seed is very important, since if cut when too ripe much will be lost by shattering. A general rule is to cut it when three-fourths of the seeds are black and the rest a yellow brown. The seed ripens very irregularly, and some branches will be in bloom when others are ready to harvest. It should be hulled as soon as dry. The ordinary clover huller does not handle sweet clover very satisfactorily. If possible, use a thresher with a clover hulling attachment. Probably the best way, until the hullers are adapted to handling this crop, is to run the crop through an ordinary huller. This will give the seed in good shape.

SWEET CLOVER AS A SOIL RENOVATING CROP.

As a crop for soil improvement sweet clover promises to become of great value especially in our systems of grain and mixed farming, and possibly in the live stock system. It has this advantage over alfalfa that it works well into systems of rotation and could be turned under with a clear conscience. With the exception of alfalfa it is the deepest root crop grown, the tap roots penetrating to a depth of 3 to 5 feet. This makes it especially valuable as a subsoiler. The root development takes place largely during the first season. The growth of top during the first year is not usually very large, probably not much larger that the total root development during the same time.

The growth of top during the second year is one feature that makes it such an excellent crop for soil improvement. One of the most important problems in soil management is maintaining the supply of nitrogenous organic matter to provide nitrogen for the crop and humus for keeping the soil in good tilth. Sweet clover provides an abundance of both.

The following table gives the results of some investigations of sweet clover at the Illinois Agricultural Experiment Station:

ILLINOIS INVESTIGATIONS OF SWEET CLOVER (M. ALBA).

Parts of plant depth	Dry matter pounds	per acre percent of total	Nitrogen pounds	per acre percent of total
Tops harvested...	9020		174	
Surface residue...	1338		23	
Total tops........	10357	81	197	86
Large surface roots, 0 to 7 in....	1568		17	
Small surface roots, 0 to 7 in....	241		5	
Total surface, 0 to 7 in..........	1809	14	22	10
Subsurface roots, 7 to 20 in..........	601	8	9	4
Total roots.........	2410	19	31	14
Total tops and roots..............	12777	100	228	100

Table from Dr. Hopkins' "Soil Fertility and Permanent Agriculture."

The total yield in the above is 6.4 tons of dry matter per acre of which the roots form 1.2 tons per acre, or less than one-fifth of the total. It is important to note that the tops are nearly as rich in nitrogen as red clover (40 pounds per ton), while the roots contain only about 26 pounds of nitrogen per ton, or tops and roots contain respectively 86 and 14 percent of the total nitrogen of the entire plant. The above indicates that sweet clover may be made a very valuable crop for soil improvement if properly managed. A large part of the crop should be turned back into the soil. If the entire crop is removed not only will no nitrogen be added to the soil, but since the plant takes approximately one-third or 33 percent of its nitrogen from the ordinary brown silt loam soil as determined by another experiment, the nitrogen content of this soil would actually be reduced.

At the Wyoming Experiment Station in 1905, two plots produced from two cuttings about 4.5 tons of hay per acre—from two other plots 3.75 tons were secured.

During the present year, with a deficiency of 8.3 inches of rainfall from March 1 to Sept. 1, the sweet clover produced on my own farm an average yield of organic matter of 3.6 tons per acre.

The above yields will give some idea of the value of this plant for adding matter and nitrogen to the soil. This will undoubtedly be its primary function in our systems of agriculture. If a secondary use can be made of it for hay and pasture so much the better. If, however, everything is removed, sweet clover in the hands of a selfish farmer may become one of the worst soil robbers.

Very few definite experiments have been published that give the actual value of sweet clover in increased yields of succeeding crops. The following yields were obtained near Tost, Germany, as given in Ohio Experiment Station Bulletin No. 244. Sweet clover was seeded in May and turned under the next year as a green manure:

Soil treatment	Oats per acre, bushels	Potatoes per acre, bushels
No green manure	34.3	123.6
Green manure	51 4	258.0

The question is often asked regarding the difficulty of plowing sweet clover ground as compared to alfalfa sod. The plowing is very difficult the first season, but if left until the crop is mature the roots soon begin to decay and may then be cut readily with the plowshare. The decay of these roots leaves the soil in fine physical condition.

DROUTH RESISTANCE.

Sweet clover is a better drouth resistant than any other clover. On three fields that had both red and sweet clover seeded side by side, the latter has maintained itself during the dry season of 1913 and made a good stand, while the red clover was a total failure. The same was true in 1914. It is matter of common observation that sweet clover along the roadside will be green when blue grass in the pasture is dry. Probably no crop but alfalfa is a better drouth resistant than sweet clover.

One of the objections frequently spoken of by farmers is the liability of sweet clover becoming a serious weed pest if introduced into our cultivated fields. This danger has been magnified to a considerable degree. I have written to dozens of men who have grown sweet clover more or less, asking them about this very point, and the answers have been unanimously in favor of sweet clover. It may do a small amount of damage to oats or wheat, but this injury will be much more than counterbalanced by the good that it does to the soil. Sweet clover may be used primarily as a soil improver, and when farmers are growing it, as they will in the near future, the price of clover seed will be reduced to the point where land owners will not hesitate to furnish the seed.

Champaign, Ill.

European Foulbrood

BY PAUL SCHEURING.

(Read at the Wisconsin Meeting.

I HAVE been asked to tell what I know about European foulbrood, It is a very undesirable thing to have, and very, *very* difficult to get rid of in a large apiary. A few years ago when I first discovered it in my apiary, I promptly burned all the bees, combs and frames of all affected colonies, and wrote to our State bee inspector, Mr. France. He told me that killing the queen and giving them a new queen would cure the disease.

This advice was of great benefit to me, but this will not always effect a permanent cure, although it certainly checks the disease. That the bees will sometimes supersede their queen and thereby cure it I have ample proof, especially in early spring.

In the fall of 1913 I found three affected colonies. I took away all of their combs and gave them combs of honey from good healthy colonies. This was done in the forepart of November, after all the breeding had ceased. Up to the middle of October, 1914, there was no sign of the disease in these colonies, and this with no change of queens. There is no guesswork about the queens, as I clip all of mine. On the other hand, I have taken the queen from an affected colony and put her in a queenless colony in the breeding season, and the disease was evidently carried by the queen. I burned these colonies later.

My guess, or at least one them is, the disease is spread by the nurse bees when they have a general flight, and on their return go into the wrong hive. This, in my opinion, occurs far oftener than is generally supposed. Of course, there may be other ways of spreading the disease, but until our scientific men find out for sure how it is spread, we are certainly "up a stump," and must do the best we can. We may effect a real cure of a colony and later it may get the disease in some unknown way. We quite naturally conclude the cure was not completed; although a neighbor beekeeper may have lost all of his bees by the disease; possibly one, two, or three miles away there may be a number of colonies in the cornices of houses, old hollow trees and other places too numerous to mention. From any of these sources the bees might get the disease. If a beekeeper keeps a close watch of his bees as he ought, there is no reason why he should lose a whole apiary.

West De Pere, Wis.

Candied Honey

BY ADRIAN GETAZ.

AN experience with which I met four years ago may be very useful to some beekeepers just at this time of the year. Many have trouble with their honey turning into "sugar" or

FIG. 12.—CLUMP OF YELLOW CONE FLOWERS BY RIVERSIDE

rather crystallizing—"candying" is the word generally used. It is well known that the honey gathered during the summer seldom candies, while that from the fall flowers does almost invariably. There is undoubtedly some difference between the honeys produced by different kinds of flowers. Also the honey left on the hives during summer until fully ripe seldom candies. Extracted honey is more liable to candy than comb honey.

In this locality there is usually enough honey in the late fall to keep up the bees during the winter, but seldom enough to furnish a surplus. Four years ago there was an exception. Quite a surplus was obtained in one of my apiaries situated where the golden-rods and asters are plentiful. I put on plenty of sections so that the bees would not be cramped for room. The cold weather came suddenly when the sections were only half full. There was nothing to do but to cut the honey out and put it in lard cans. Of course, a portion of the honey ran out of the combs, so that the contents of the cans were the equivalent of a mixture of comb and extracted honey.

I had for a neighbor a man who made a specialty of selling fresh vegetables, eggs, butter, etc., directly to consumers. He bought this honey. I directed him to keep it in a warm dry place and sell it as soon as possible. That apiary is quite a distance from home, and the road, or at least a portion of it, is quite bad. I did not go there until the early spring, and then inquired about the honey. I had agreed to replace what might candy on his hands. To my surprise none had candied. What he had yet was thick, well ripened honey, as good as I have ever seen. He had kept it in "the little room in the attic."

The kitchen in that house is quite large, and in winter time at least is used also as a dining room and family room. The only heating is by a large cooking range. This has a large stovepipe which goes through the ceiling through "the little room in the attic" and ends in the flue above the roof. The man had to be up at 1 or 2 o'clock in the morning, in the days he went to town. That meant an almost continuous fire through the whole winter. The cans of honey had been placed around the stovepipe.

We have here three following facts:

1. The honey gathered in the early part of the summer and exposed to the warm weather during two or three months rarely candies.

2. The fall honey, exposed to the cold weather almost immediately after being gathered, usually candies.

3. The fall honey kept throughout the whole winter at a high temperature in "the little room in the attic" not only did not candy but ripened unusually well.

I have not had any fall surplus since then, and therefore have not been able to repeat the experiment. I presume that where there is a furnace in the house, the furnace room would be the best substitute for "the little room in the attic."

Knoxville, Tenn.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Frames and Honey from American Foulbrood Colonies

I have 40 colonies of bees with American foulbrood. I would like to treat them in the spring. Would it be safe to give them the foulbrood honey after melting the combs or would I have to boil it? Would it be safe to use the frames again after boiling and cleaning them.
WYOMING.

ANSWERS.—You must boil it. If you boil it without any water, the outer part may burn while the center is not heated enough to make it safe. So add water, perhaps half as much water as honey, slowly heating at first until all is thoroughly melted, and then bring it to a boil and keep it there for at least 15 minutes. Even then some think it unwise to feed such honey.

The frames may be used again if thoroughly boiled.

Melting Combs in European Foulbrood

You state you will never melt up any more combs on account of European foulbrood. What would you do with combs partly filled with honey and empty, that were left by a colony that had died with the disease?
KANSAS.

ANSWER.—Candidly, I must confess I don't know. As you state the case, I can imagine a colony so thoroughly rotten with the disease that it dies outright, leaving combs containing some honey, but most of the cells filled with diseased and dead brood. If I had such a case I should feel a good deal like burning up the whole thing. I'm pretty certain I should if it were the only diseased colony in the apiary. If the disease were spread throughout the apiary, I think I would let such bad combs dry until the dead larvæ were dry. Then if there was honey in some of the combs that I thought fit for table use, I might extract it. Whether the combs were extracted or not, I might give them in an upper story to some colony having the disease but not badly affected. In fact, this latter is just what I do, piling the diseased combs four or five stories high—only the combs were not so badly diseased as in the supposed case.

Even while saying that with a single case in the apiary so bad as imagined, I should burn up the whole thing, I still stand by my assertion that I will never melt up any more combs on account of European foulbrood, because I am very sure I'll never allow a case to get so bad as supposed.

Bees Dying—Strains of Bees—Introducing

1. What ails my bees? Quite a number of them are dead or dying. One day while the snow was on the ground I saw dead bees on the snow. While I was there a bee came flying out of the hive, lit on the snow and was frozen; it was zero weather. I have a box set over the hive; the front side is open. They are not packed. The entrance of the hive is wide open, and they have plenty of honey to winter on with nothing to disturb them. They are Italian bees.

2. What is the best bee for this country, the Buckeye strain, 3-banded, golden Italian or leather colored?

3. How can I tell a queen-cell from all the rest?

4. What is the best way to introduce a valuable queen?
OHIO.

ANSWERS.—1. There may be nothing wrong at all, depends upon what is meant by "quite a number." In a strong colony it is nothing strange if a thousand bees die off in the course of the winter, and when the sun is shining upon the white snow it is nothing alarming to see a bee fly out to meet its death in the snow.

2. There are good bees of almost all kinds, the majority of beekeepers probably prefer the 3-banded Italians.

3. Get a good bee-book; you need one anyhow, and in it you will have a picture of a queen-cell which will teach you to recognize it easily. Still you will not have much trouble in telling one when you see it. It is entirely different from worker-cells or drone-cells, which are alike except as to size. If you find a big cell that looks a good bit like a peanut, you may know that it is a sealed queen-cell. When it is first begun it looks something like an acorn cup.

4. With a very valuable queen, if you want to be entirely safe, proceed in this way: Put two, three, or more frames of brood in an upper story over a strong colony, having a queen-excluder between the two stories. In about eight days all the brood will be sealed. Now lift the upper story, take away the excluder, and cover the hive with wire cloth, which will not admit the passage of a bee. Over the wire cloth set an empty hive-body. One by one lift the frames out of the removed upper story, brushing off upon the ground in front of the hive all the bees from each comb, and putting the brushed combs into the empty upper story. Put your new queen into this upper story and cover up, making very sure that not a bee can get in or out. Your queen is now alone in this upper story, but will probably have company within five minutes, for young bees will be hatching out constantly from the sealed brood. No bee can get from one story to the other, but the heat can rise from below to keep the upper story warm. In about five days you can set this upper story on a new stand, giving it entrance for only one bee at a time. If your bees act as mine have done, and the circumstances are favorable, before night you will see some of the 5 day old bees entering the hive with pollen on their legs.

Wintering Two Queens In One Hive

How can I winter two queens in one hive and have the bees run together?
ILLINOIS.

ANSWER.—I don't know, having never tried it.

Candied Honey as Feed—Where Does Wax Come From?

1. Since as it would seem no established beekeeper produces enough wax to work into his necessary foundation, where does the surplus come from?

2. Why is it that hard sugar candy is used as winter feed while the candying of honey in the hive is deplored? Why not feed candied honey over the cluster when needed?

3. Have you ever had one or more colonies

allow the queen to dwindle and disappear without an effort to supersedure? How do you explain such occurrence? COLORADO.

ANSWERS.—1. "Things are not what they seem;" at least not always. An established beekeeper may not produce enough wax for his own foundation, and again he may. If he works for extracted honey, and has reached the point where he makes no more increase and needs no more combs, he may have a surplus of wax from his cappings, and probably will have. Even if he renews his combs, the melted combs should furnish wax for the new ones. Upon him the comb-honey man may depend for his wax. There are always more or less beekeepers who use little or no foundation, and such men are likely to produce surplus wax by means of the combs they melt up from the deceased colonies.

2. Your question is hardly a fair one, for it sounds like saying that there is no objection to feeding candy, while there is objection to letting the bees have candied honey. The fact is that there are good authorities who deplore the feeding of sugar candy more than the candying of honey. There is, however, not so much said against the feeding of sugar candy, becase it is often a choice between that and starvation, in which case the feeding of candy is not a thing to be deplored. In the case of honey candying, it is to be deplored because it is not so good as liquid honey. It remains, however, to say that it is quite possible that it is better to feed candied honey than to feed sugar candy, and that so good authorities as the Dadants have practiced feeding candied honey. Perhaps ye Editor will tell us about it in a bracket. [Sugar may be *crystallized* in lumps like rock candy, in which case it is of no use to the bees. But soft candy makes good bee food. The same may be said of granulated honey. If the honey has granulated in a way that there are hard, crusty lumps in it, some of it may be lost by the bees, especially if they attempt to consume it in dry weather. When the atmosphere is loaded with moisture, much of this softens so the bees can use it. But well ripened honey which has a soft granulation will be consumed to the last mite. We have very often fed candied honey in the way suggested by our correspondent.—C. P. D.]

3. I don't remember that I ever had such an experience, and have no explanation for it.

Questions from England

1. I would like to know that part of California where the largest apiaries are, as I hope to be traveling over there before long. I should like, if possible, to call on one or two.

2. Is North Carolina a good State for beekeeping, and, if so, what part?

3. Do bees have to be taken into a cellar for winter? ENGLAND.

ANSWERS.—1. I think North Carolina averages fairly well in beekeeping, but cannot give information as to different localities. In no part of the State is it necessary to cellar bees.—[Answer to the first question is referred to our California correspondent for reply.—EDITOR.]

Queen Introduction

What difference, if any, is there about acceptance of a queen in a colony that has been queenless for some time (no laying worker), and in case of increase by division of a colony, as to queen given to the queenless part? PENNSYLVANIA.

ANSWER.—Introduction would be quite a bit more likely to be successful in the second than the first case. It is generally found that it is more difficult to introduce a queen to a colony that has been queenless for some time than to one from which the queen has been recently removed. The reason may be because of the age of the bees, for it is the older bees that make trouble when a new ruler is introduced.

Eight Frames Sufficient—Requeening

1. Are eight Langstroth frames full of honey enough to winter a strong colony of bees out-of-doors? I pack in leaves, three in a shed, 6 inches of space between each hive.

2. Black queens are very hard to find without using an excluder. Would you recommend requeening by the Hand method described in Gleanings in Bee Culture some time ago? IOWA.

ANSWERS.—1. Yes, less than eight frames; six would do if well filled.

2. As I don't know just where to look "awhile back," I don't recall the exact method of introduction, but as Mr. Hand is an experienced beekeeper, the plan is doubtless all right.

"Put Up" Plan

Last year I tried the excluder plan in treating colonies, but in two out of three colonies so treated I found that the bees started cells in the upper hives, but I cut out all cells but one before I set the old hive down and killed the old queen (that is if she was not a desirable one). All colonies treated this way did not swarm that season. I think it is a good plan. I shall try the "put up" plan next season, and the dequeening plan also.

What would you say to this way of treating swarms that are "put up?" Give a frame of young brood from my best queen in the lower hive, and let the bees rear a young queen from this frame of brood; of course destroying all cells but one, then after the young queen starts to laying, kill the old queen in the upper hive before putting the hive on its original stand. I will kill the old queen if she is not desirabie. (Of course, I will save all cells from the best queen if possible.) SUBSCRIBER.

ANSWER.—I see no reason why the plan should not work; but I have never tried exactly that plan, and sometimes a plan that looks all right will turn out all wrong because of some little kink we had not thought of. The only way to be sure about any new plan is to submit it to the bees for their approval. Even then we are not always sure from a single trial. A different season or different circumstances may give different results.

Packing Bees—Opening the Hive in Winter—Uniting

1. I have a colony of bees that I have left outside with a box cover packed with leaves. They have nothing over the brood frames, but are wintering finely. Does it hurt the bees much to open the hive in cold weather?

2. Is it necessary to have a covering over the brood-frame when it is packed to the top and protected from the wind?

3. What is your best plan for uniting a weak colony with a stronger one? MICHIGAN.

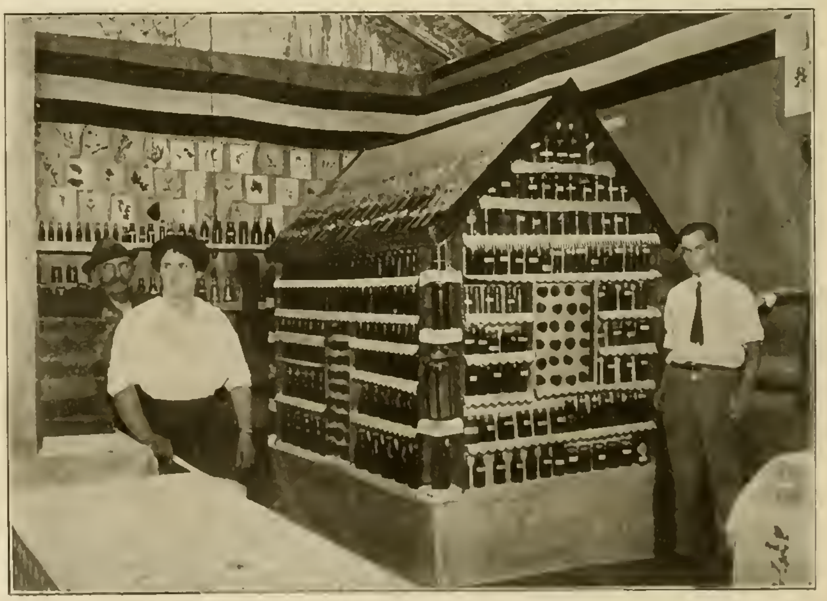
ANSWERS.—1. Sometimes it does a great deal of harm, even to the death of the colony, to open a hive and disturb the bees when it is too cold for them to fly. When it is warm enough for them to fly it may do little or no harm; but when very cold better not disturb them unless there is danger of starvation.

2. That depends upon the kind of packing. One object of the covering is to support the packing, and if the packing be something like chaff that would sift down among the bees, then some kind of covering over the frames is very important. But if the packing be something in the nature of cloth or old carpets, then it matters little.

3. Generally there is nothing better than the newspaper plan. Put a sheet of newspaper over the top-bars of the strong colony and set over it the hive containing the weaker colony, with no chance for the bees to get out of the upper hive until a hole is gnawed in the paper. After a few days the frames of brood in the upper story may be moved into the lower story. When bees are not flying daily, there is little trouble in uniting by merely placing the frames of brood and bees from the weak colony beside those of the stronger.

Eight-Frame Hives for Extracting

With regard to the query concerning "Large Hives" in No. 1 of the American Bee Journal, I will say that in my opinion and according to my experience, I take the 8-frame hive for an ideal hive for *extracting*. With these hive-bodies I can give the bees all the room they need as well as with the



J. P. LUCAS' EXHIBIT AT KANSAS STATE FAIR

10-frame hive. At any time in spring when the bees cover their combs well, I add another hive-body with combs, and I continue to do this as often as they need more room. During the last season I had colonies with four hive-bodies, just boiling over with bees, with hardly any swarms. These hive-bodies were all filled with honey and brood.

In running for extracted honey, I put 30 combs (Langstroth size) in these four hive-bodies, which is equal, or a trifle larger, than three 10-frame hive-bodies. As a rule, this is sufficient *here*. If anybody finds that his bees need more space, let him add a fifth story. For comb honey, of course, this procedure is entirely out of question.

As this way of using a small hive and yet having big colonies of bees, works so well here I would advise those who contemplate introducing larger hives to try this way. When the warm season sets in give plenty of ventilation by boring a hole in the upper story and sometimes by putting three-sixteenths inch thick blocks between the supers, and by enlarging the flight hole from ½ to ¾ inches by 12 inches.

INDIANA.

ANSWER.—I know that 8-frame hives can be used as you say, for I have used them so for years, although piling up only a few of them in the way you mention. Even when working for comb honey, I use two stories whenever needed before the harvest, and can have just as strong colonies as with 10-frame hives. But when they ask us, "Couldn't you get just as strong colonies in larger hives?" I'm obliged to answer that I could. And are you sure you couldn't get just as much extracted honey with the larger hives? The main advantage of the smaller hives is that they cost less and are lighter to handle; but with most beekeepers that would not balance the advantage that with the larger hives there is less danger of starving in winter.

In order to secure ventilation, instead of boring holes or wedging up, I prefer to shove the stories backward or forward.

Hive-Bodies, Shallow Frames, Etc.

1. In your answer to "Missouri," page 422, you say that hives should be 10 inches deep inside. Does that include the ½ inch or more that the bodies are raised above the bottom-boards by the cleats or edges on which the hives rest? I have some nice lumber 9¾ inches wide. Would this do? It is for the hive-bodies proper. Or should it be cut down to 9½ inches, the regulative hive depth?

2. Will partly filled sections do for fall feeding in place of sugar? Would they keep until next year if properly cared for?

3. How would it do to put about four shallow extracting frames in a super and fill the rest of the space with sections?

4. How can I extract the honey from a few shallow frames occasionally without an extractor, and save the combs for future use?

5. Are shallow frames usually wired?

6. Are starters or full sheets of foundation put into frames every time the full combs are cut out when running for chunk honey?

PENNSYLVANIA

ANSWERS.—That statement that the depth of a hive body is 10 inches is inexcusably careless, and I am very much ashamed of it. It is true that some hives are made that depth, and for one who uses section supers or shallow extracting supers, 10 inches will work all right. But there are likely to be times when one wants to use a hive body as an upper story, and then the case is different. Suppose we figure a little. The Langstroth frame is 9⅛ inches deep. Allow the bottom-bars to be flush with the bottom of the hive, and there must be a space of ¼ inch above the top-bar so as to leave a ¼-inch space between the top-bars of the lower story and the bottom-bars of the second story, in case we want to use a hive-body for a second story. Add that ¼-inch to the 9⅛ inches, and we have 9⅜ inches as the ideal depth for a hive-body. That's all right when everything is entirely new and clean. But they will stay neither new nor clean. Even well seasoned stuff is likely to shrink a little in the course of years, and there will be over top-bars and under bottom-bars accumulations of wax and propolis, making the space between the two stories a good bit less than the original ¼ inch. Then the bees will be sure to glue the top-bars of the lower story to the bottom-bars that are over them. So it will be a safe thing to make the hive-body never less than 9½ inches even with the best seasoned lumber, and the probability is that you will have no trouble if you use your 9¾ lumber without cutting down. But 10 inches would be a little too generous allowance for shrinkage and accumulations.

2. They will do nicely for fall feeding, and will keep well for use the next year or for five years later, after the bees have cleaned them out in the fall. But unless the honey is thus cleaned out in the fall, it is not likely you can keep them so as to be used the next year.

3. It will work all right, but you must expect the bees to fill the extracting combs in advance of the sections generally.

4. I don't know how you can do it, unless you do as von Hruschka's boy did at the time his father invented the extractor. Take a pail large enough so you can lay the frame flat on the bottom, tie a string to the bale and whirl the pail about your head.

5. Unless rather heavy foundation be used, it is better to wire.

6. Some use full sheets, some use starters, and some use neither, when the comb is cut out leaving enough of the comb under the top-bar to serve as a starter.

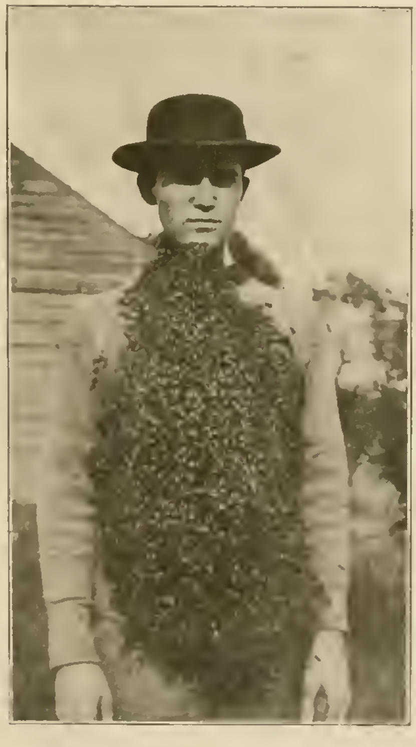
REPORTS AND EXPERIENCES

Advertising Bees and Honey Without Expense

Beekeepers, as a rule, do not realize what an advantage they have in the way of securing free advertisement; not only free, but, if properly managed, one can get pay for advertising his own business. We beekeepers study the mysteries of the bees, and discuss them among ourselves through the medium of the bee journals until to us they are commonplace. The rank and file of the honey consumers never get to know of the marvelous things of interest concerning the bee and its works. It is "up to us" to give them, through the newspapers and magazines, live, interesting sketches of the bee and honey industry. They like anything unique, original, and interesting to the public.

Of course, a person must not give the articles the appearance of advertising or it will "queer the game." It is not necessary to say that you have honey or bees to sell. If you have bees they will know that you have honey. I have frequently noticed the surprise of people when I tell them that I produced a ton of honey. The word "ton" seems much bigger when applied to honey than does 2000 pounds. So does "half a ton" or a "quarter ton." It probably seems big to them because they were familiar with it only in spoonful lots when used to cure colds. Then, again, the public cannot get away from the belief that the principal business of the bee is to sting; that the sting is something awful, and that, if you go near a hive of bees you are taking your life in your hands. Some of the common "stunts" that are pulled off among the beekeepers would amaze the public. L. N. GRAVELY.

Ringgold, Va.



A NEW PLACE FOR A SWARM, THE CHEST OF L. N. GRAVELY, OF RINGGOLD, VA.

Does Sweet Clover Bloat Cattle?

A writer in the American Bee Journal claims that sweet clover bloats cattle. I have read very much about this plant, but I have only once heard that cattle happened to die of it. In this case they ate it so greedily that the quantity, but not the quality, of the green clover killed them. Excess is always hurtful, no matter how good a thing may be in itself. I hope to get some information through the readers of the American Bee Journal. SUBSCRIBER.

Spencer Co., Ind.

Bad in Illinois

Beekeeping in my locality has been very bad for the last three years. I did not sell a case of honey for two years; the bees just made a living, and sometimes not that. Last year we did not get any rain from spring until September, so you know that there was no honey. HERMAN GEIER.

Morton, Ill., Jan. 18.

Wintering Finely

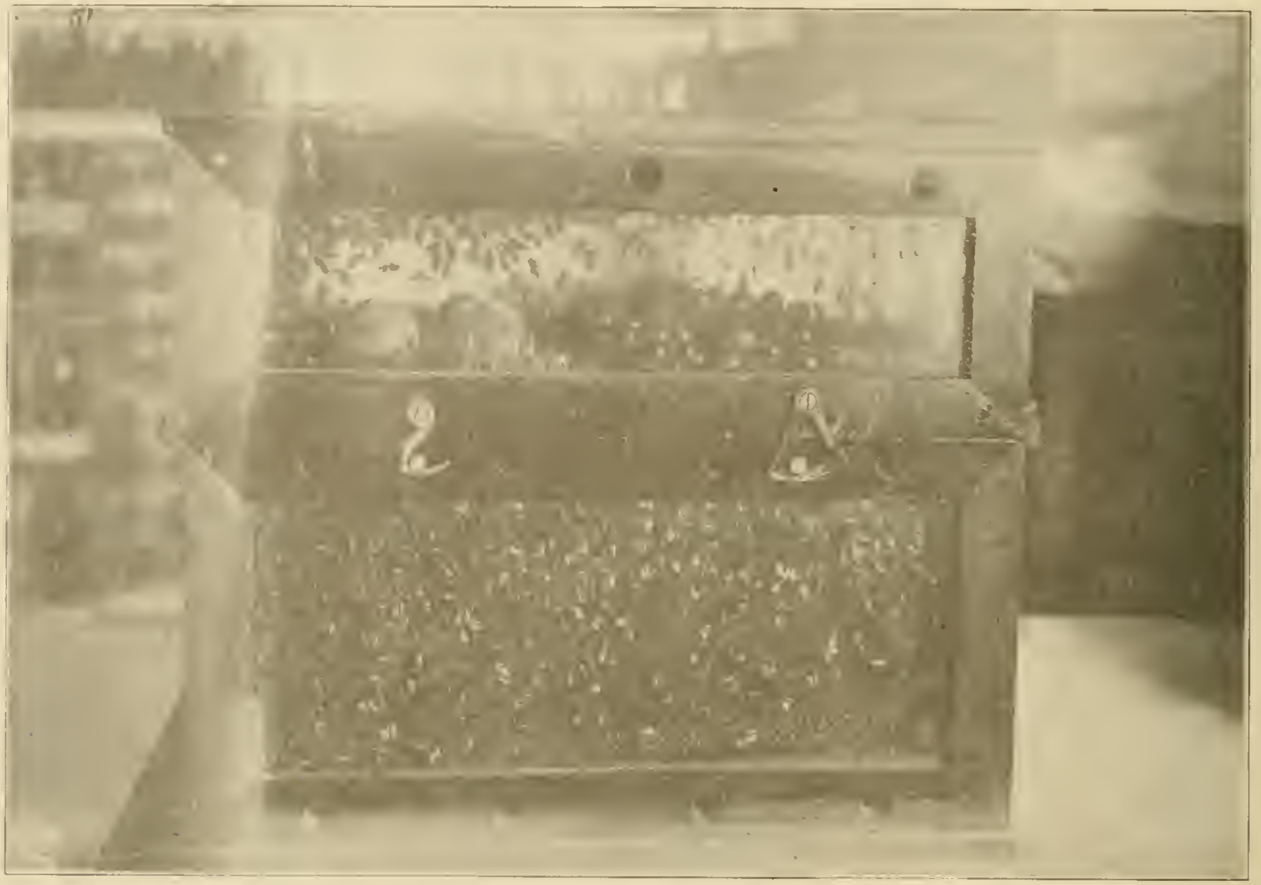
My bees are wintering finely. I believe this will be a good honey year. I am getting everything ready for it. F. LEE.

Cokato, Minn.

Notes from a Queen-Breeder

I find that a colony that supersedes in early spring is a blank through the season so far as honey is concerned; but when they have their own way they usually supersede at a time when it will hurt them the least.

About 20 years ago there was a late freeze. It came as the poplar began blooming, and my queens were all laying, and had their hives almost full of brood. After the weather warmed up again they were about



METHOD USED BY J. P. LUCAS AT THE FAIR TO SHOW THAT BEES CANNOT PUNCTURE SOUND FRUIT

half missing; so it appears to me that hard spring weather has a bad effect on queens when they are laying to almost their full capacity. It matters not so much how bad or cold it is when they are not laying. They will not be injured as if full of eggs at the time. I have had queens to do good work the fourth year. I usually let the bees do their own superseding unless the queen is bad or her bees undesirable in some respect. I never replace a queen just because she has attained a certain age.

I believe that a queen wintered in a very small colony and left to run short of stores will very often be injured and almost worthless thereafter; while if she had been in a strong colony with plenty of honey she would have been good. **R. A Shults.**

Cosby, Tenn.

Honey Crop a Failure

The honey crop in these parts this past year was a failure, many not getting nectar enough to winter through.

From ten colonies, spring count, I got about 100 pounds; but think that two will not winter through, as I have no time to feed them. The others bid fair to come along all right. I winter outdoors in an open shed, with double walled hives. I increased four swarms by natural swarming the past season. **W. D. Stambaugh.**

Richelieu, Nebr.

Exhibited at Kansas Fair

I am sending some pictures; they are part of my display at the Kansas Fair. I have 24 different kinds of honey, which make a nice display. It is quite interesting to many to know honey is gathered from so many different sources. I tried to show the people that bees did not destroy fruit. I made a hive as nearly as I could of glass and put a full colony of bees into it, and in the supers I put in peaches and grapes, as you can see. I kept them thus through the fair a week, nearly two weeks in a show window, and the fruit was not molested

Next year I shall show the people how honey is extracted by operating the extractor on the Fair grounds, which will be something new to many, as I was asked more than a thousand times how I got the honey out of the comb.

Yes, we had a grand good Fair, and everything went off fine, and it looks now as if it might be better next year. I got eight 1st premiums, eight 2d, and two 3d. I shall try and do a little better next time.

Bees did not do very well here this season. I take a little extra pains with mine by feeding in the early spring, so as to be ready when a flow comes, and right around me there are six or seven acres of raspberries which gave me some very nice light amber honey. Last spring I sowed quite a bit of catnip and hoarhound seed, also a lot of sweet clover seed, so I am doing all I can to give them plenty of pasture. **J. P. Lucas.**

Topeka, Kan., Oct. 15.

Good Prospects for Texas

This is the longest wet spell that south Texas has any record of. We have not seen the sun for three weeks The ground is thoroughly soaked, and the honey plants are thicker than usual and well advanced. A freeze does not hurt them. We have had no frost yet, and have fine tomatoes, beans and other vegetables in open garden.

Our prospects for an early honey flow could not be better at this time of year, **Grant Anderson.**

San Benito, Tex., Dec. 24.

A Washington Report

I started in the spring with 32 colonies, had one swarm, lost one colony, so I have 32 colonies prepared for winter, and wintering on the summer stands. It seldom gets colder than 20 degrees above zero, and the bees have a flight nearly every week. After having given all the colonies 30 pounds of sealed combs, I have sold 1000 pounds and have about 1360 pounds for sale. Crop will perhaps average 75 pounds per colony. I have some 10 or 12 supers not extracted yet. I run for extracted honey altogether, and sell it at 10 cents a pound to customers. I never sell any to stores. I put it up in the ½ gallon Mason jars, put a nice label on, and they go like hot cakes at 60 cents a jar. This jar holds 5 pounds, and costs me here $9 50 a gross. Some of my customers send the jars back to be filled again. This year I got some pure fireweed honey, about 300 pounds. **O. K. Rice.**

Wahkiakum Co., Wash.

Comb Taken Out for Wintering

Bees are wintering finely here so far on the summer stands. They have been flying nearly every day until the last ten days. For wintering light colonies, I remove one frame from the hive and spread the frames, leaving one frame to fill the space of two, making sure to have plenty of honey on each side. This gives the bees a chance to form a more compact cluster, and I never have any trouble to winter them in good shape, and they commence to breed earlier than if they had all the combs.

I have never seen this method spoken of in the Bee Journal, and it may be of use to some that have never tried it. I replace the extra frame before time to build comb

Delta, Colo., Dec. 20. **Geo. F. Lester.**

Following Instinct of the Bees

I have 150 colonies of bees, and have had bees for over 50 years, and I am convinced the nearer the beekeeper conforms to the instinct or nature of the bees the nearer he will be to perfection. The feeding of bees should be as near to pure honey as is possible. I usually have enough honey that is not salable to feed in spring to produce early breeding; for this is the one important time for strong swarms

My bees produced 1⅓ cases of marketable honey the past season, notwithstanding the months of May and June were cold and wet.

Marshfield, Wis., Jan. 8. **Jay C. Davis.**

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary.
J. H. M. Cook,
1Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa

UNTESTED Queens, 75c each; $7.50 per doz. Nuclei, $1.25 per frame. Bees, $1.50 per pound. Full colonies, 8-frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

QUEENS, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

PHELPS' Golden Italian Bees are hustlers.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

QUEENS OF QUALITY—I am booking orders for early queens now. Three-banded Italians only. Circular free.
J. I. Banks, Dowelltown, Tenn.

FOR SALE—After May 15, two carloads of Italian bees in 10-frame hives on metal spaced or Hoffman frames; new combs. Will quote prices delivered if preferred.
The J. E. Marchant Bee & Honey Co.,
Apalachicola, Fla

ITALIAN and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.
Grant Anderson, San Benito, Tex

PLACE your order early to insure prompt service. Tested, $1.25; untested $1.00. Italians and Goldens. John W. Pharr.
Berclair, Tex.

TRY my best bright yellow queens. They are beautiful and good honey "getters;" 60c each or $7.00 per dozen. Safe arrival and satisfaction guaranteed. M. Bates,
Rt. 4, Greenville, Ala.

NOTICE R. A. Shults will sell Italian queens in the season of 1915. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00. Breeders, $5.00. Bred from Moore and Doolittle stock. R. A. Shults
R. F. D. 3, Cosby, Tenn.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10 C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

I CAN supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed.
I. N. Bankston, Buffalo, Tex.

FROM SOUTHERN NEW MEXICO—My yards will be able to furnish you bees by the pound at an early date. No disease. Satisfaction must be yours. Write at once. I can surprise you on prices. Established in 1914. S. Mason, Hatch, New Mexico.

FOR SALE—After May 15, two thousand pounds of Italian bees in any size package with or without queens. Any size order accepted. Write for our circular on prices of bees and queens. Our queens are Island bred, and pure mating guaranteed.
The J. E. Marchant Bee & Honey Co.
Apalachicola, Fla

GRAY CAUCASIAN—When this bee was first imported three queens came to me direct, resulting in revolutionizing my very small bee business to 3000 colonies in 55 yards, and improving the once raw stock has been my chief aim, and in true value it has no equal, and a queen from my great bee-business will prove it. For full particulars and prices write. J. J. Wilder, Cordele, Ga.

500 SAMPLE QUEENS at 40c on first 500 orders. Moore's Strain Leather Colored Italians. Write for particulars and prices in quantity. April and May orders booked now on 10 percent deposit. Orders filled promptly or notice given when such deliveries can be made. Regular prices Untested queen, 75c; six, $4.25; twelve, $8.00. Timberline Riggs, breeder.
Ogden Bee & Honey Co., Ogden, Utah.

I WILL again sell bees and queens shipped from north Louisiana in April. In cages, 1 pound, $1.50 2 pound, $2.50. In nuclei, 2 comb, $2.75; 3 comb, $3.75. Six or more at one time to one address 5 percent discount. 1914, or young Italian queens for business; $1.00 extra. Queens only at $1.25. Shipments will be put up by experts under my personal supervision. I will try to please. A receipt in good condition will be taken. Part payment will secure the order. Bees shipped from Jonesville and Black River, La.
H. C. Ahlers, West Bend, Wis.

CALIFORNIA QUEENS, Nuclei and Bees bred from the best Doolittle stock, ready for shipment at once. Queens, untested, 75c; dozen, $8.00. Tested, $1.25; dozen, $12. Mismated, one year old, 50c; dozen, $5.00. Tested, one year old, 75c; doz., $8.00. Nuclei, 2-frame, $1.50; 3-frame, $2.25, 5-frame, $3.00; 10-frame colony, $4.50. Bees by pound, ½ lb., 75c; one lb., $1.00. Add prices of queens desired to all above prices of bees and nuclei. Delivery guaranteed. No disease.
Spencer Apiaries Co., Nordhoff, Calif.

"NEVER KNOW"—You will never know how delicious pure extracted orange blossom honey is until you taste it. Clear, thick, and rich, having somewhat the flavor and aroma of fresh orange blossoms. Sample pound by parcel post, prepaid to any U. S. point for 30c in stamps. One gallon 12 pounds parcel post, prepaid up to and including Zone No. 4, $1.50; Zone 5, $1.75; Zone 6 $1.95; Zone 7, $2.20. One gallon to introduce it, by express f. o. b. Rialto, $1.00. Your post-master can tell you what zone you are in, and you can calculate from San Bernardino, Calif., as we are in the suburbs of that city. A 60-pound can by express or freight $5.40; two cans, a full case of 120 pounds, 8⅓c per pound, or an even $10 f. o. b. Rialto. Untested, 3-band or golden Italian queens, $1.00 each; $4.25 for six; $8.00 per dozen. Tested queens, $1.50 each. Full 8 frame single story colonies with untested queens, $5.00 each; bees in pound packages, or any way that suits you best, $1.25 per pound f. o. b. Rialto. For quantity lots on anything ask for prices. Safe arrival and satisfaction to all customers. Rialto Honey Co., Bx. 73, Rialto, Calif.

HONEY AND BEESWAX

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

WE HAVE several lots of extracted honey in 60-lb cans from 7 to 9½ cts a lb. Sample 10c. I. J. Stringham, 105 Park Pl New York.

FOR SALE—Nice, thick, well ripened amber extracted honey; mild flavored; two 60 pound cans to a case. Single cans, 8c, by case, 7c; ten case lots, 6½c per pound.
H. G. Quirin, Bellevue, Ohio.

FOR SALE—Spanish needle, hearts ease. No. 1 light comb, $3.00 per case, fancy, $3.25. Mixed fall comb, $2.50 to $2.75 a case. 24 Danz sections to case. Extracted, 120-lb cases 9c per pound. W. A. Latshaw Co.,
Carlisle, Ind.

THE BEEKEEPERS' REVIEW is now owned and published by the honey producers themselves. It is *the* paper *all* honey producers should support. Eight months trial subscription, beginning with the May number for only 50c. Sample copy free. Address, The Beekeepers' Review, Northstar, Mich.

EXTRACTED HONEY Best Water White and nice Amber Alfalfa in 60-lb., 30-lb., and smaller tins. State quantity you want. Special prices on ton lots or over. Several carloads just in. Dadant & Sons, Hamilton, Ill.

MISCELLANEOUS

WANTED—Situation by a young man as student; no bad habits; a willing worker. Wages no object. Will Loge,
540 Herman St., Milwaukee, Wis.

FOR SALE OR EXCHANGE for honey or beesuplies, 1912 5 H. P. American twin cylinder motor cycle. Cost $240. What's your offer?
Emil E. Nelson, Route 2, Renville, Minn.

FOR SALE—A good bee location; 40 acres with good house and barn, also 20 colonies of bees with fixtures. Located in the central part of Wisconsin. For further information, write to Geo. Delano,
Royalton, Waupaca Co., Wis.

FOR SALE—Northern grown unhulled white sweet clover seed (biennial). The northern seed is softer and germinates a much larger percent, therefore cheaper. Price, 50 pounds or more 15c per lb. Less than 50 lbs, same price plus 20c for grain bag. Have limited quantity. Prompt shipment or money refunded.
Ira D. Bartlett, East Jordan, Mich.

How many people are there who really know what good Queen Bees are? We suspect that thousands of beekeepers know, so we claim to know, and can sell good queens to all who wish them. The well known three-bands and Goldens. Untested, $1.00 each; $4.25 for six; $8.00 per dozen. Tested, $1.50 each. Full eight-frame hives with untested queens, $5.00 each. Bees in pound packages, $1.25 f. o. b Riverside. Promptness and honest treatment, and of course satisfaction and safe arrival. Do not return dead queens to us; just state it on a postal, and we will return one at once.
Golden Rule Bee Co., Riverside, Calif.

You have been thinking for some time you would like to become a National Beekeepers' Association member. Now is your time; a year's dues to the National and eight months' subscription to our own paper, the Beekeepers' Review, beginning with the May number both for only a dollar. Address with remittance, The Beekeepers' Review, Northstar, Mich.

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FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods; $1.00 per 15 or $5.00 per hundred. Satisfaction Guaranteed.
W. H. Payne, Hamilton, Ill.

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FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

BROTHER BEEKEEPERS, send for my new prices on Supplies. I can save you money. Beeswax wanted. W. D. Soper,
Jackson, Mich.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

HONEY AND BEESWAX

CHICAGO, Jan. 15.—The market on comb honey is of small volume, but prices are likely to continue so for the rest of the winter. The best grades of white comb are bringing 16@17c per pound, for ambers from 1@3c per pound less. Extracted honey is also quiet with an abundant supply. In a small way white clover and linden brings 9@10c per pound. No report of carload sales. Other kinds of white honey are not at all active, and prices vary according to quantity. Beeswax is slow of sale at about 30c per pound. R. A. BURNETT & CO.

CINCINNATI, Jan 21.—The demand for comb and extracted honey is somewhat improved, and conditions in general look more favorable. Comb honey is selling at $3.50 to $4.00 per case; fancy white clover extracted from 8@10c, and southern amber and the like have been selling from 5½@7c a pound, according to the quantity and quality purchased. We are paying 28c a pound delivered here for bright yellow beeswax.
THE FRED W. MUTH CO.

DENVER, Jan. 21.—We have a small supply of comb honey again, which is being offered at the following jobbing prices: Fancy white, $3.15 per case of 24 sections; No. 1, $3.00 per case, and No 2 at $2.85. There is a fair demand for strictly first-class white extracted honey. Our local jobbing prices are 8½@8¾c for white; 8@8¼c for light amber, and 7@8c for amber strained. We buy beeswax and pay 28c in cash and 30c in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

INDIANAPOLIS, Jan. 18.—The market on comb honey has been fairly good the past week, and quite a demand for extracted of good quality. We are still selling No. 1 choice white comb at $3.50 to $4.00 per case; choice Cuban comb which is of fine quality at $4.00. Best white extracted in 60-pound cans, 9½@10½c; California sage, 10@11c; white clover and basswood mixed, 9½@10c. Producers are being paid 30c cash for beeswax, or 32c in trade delivered here.
WALTER S. POUDRR.

NEW YORK, Jan. 18.—There is very little doing in comb honey. There is some demand for No. 1 white stock, which is selling at around 14@15c per pound, while off grades are neglected altogether. Buckwheat is pretty well cleaned up at this time, As to extracted, the demand is only fair, and mostly for choice grades of which there is not an overstook, with prices ruling from 8@9c per pound, according to quality. Large quantities from the West Indies have been and are arriving at this market, and prices on these grades are ruling very low, and we can see no indication for any improvement for the time being. Beeswax is quiet, selling at from 28@30c per pound according to quality. HILDRETH & SEGELKEN.

BOSTON, Jan. 15.—Comb honey is moving slowly. Mostly western, 15@17c, California amber, extracted, 8½@9c; white, 10@10½c.
BLAKE-LEE COMPANY.

KANSAS CITY, MO., Jan. 14.—The receipts of both comb and extracted honey are more liberal and the demand fair. We quote; No. 1 white comb honey, 24-section cases, $3.50; No. 2, $3.25; No. 1 amber, $3.25; No. 2, $2.75 to $3.00. Extracted, white, per pound, 7½@8c; amber, 6@7c. Beeswax, No. 1, 28c; No. 2, 25c.
C. C. CLEMONS PRODUCE COMPANY.

Canadian Beekeepers!

The undersigned desire to thank their many friends for their hearty support during the past when our business was carried on under the name of THE CHAS. E. HOPPER COMPANY. The undersigned have bought out all the assets of the late CHAS. E. HOPPER COMPANY which partnership was dissolved on Nov. 20, 1914. We beg to announce an all Canadian and American line, including Dadant's foundation, the New Drive Extractor, Gasoline Engines, etc.

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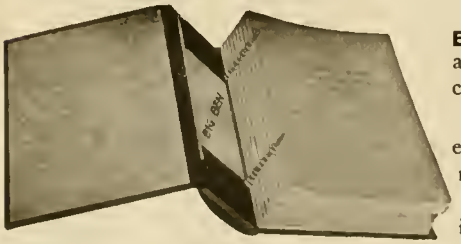

The cut illustrates the **Big Ben Binder.** It is made of heavy cloth and is arranged so that each number can be filed as received.

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American Bee Journal, Hamilton, Illinois

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Fifty Years Among the Bees, by Dr. C. C. Miller.—340 pages, bound in cloth, and illustrated with 112 half-tone pictures taken by Dr. Miller himself. It is a good, live story of successful bee-keeping by a master of the subject, and shows with clearness just how Dr. Miller works with bees and produces tons of honey. Price, $1.00, postpaid; or with the American Bee Journal a year, $1.80; or given FREE as a premium for sending 3 New subscriptions at $1.00 each.

Scientific Queen-Resring, as Practically Applied, by G. M. Doolittle.—It tells how the very best Queen-Bees are reared in Nature's Way. A good authority says: "It is practically the only comprehensive book on queen-rearing now in print. It is looked upon by many as the foundation of the modern methods of rearing queens wholesale." Price, bound in cloth, 75 cts., postpaid; or with the American Bee Journal a year—both for $1.50. The same book bound in leatherette, 50 cts., postpaid; or free with the American Bee Journal one full year if paid in advance strictly, by either new or renewal subscription at $1.00.

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1-lb. pkg. bees	2.00	11.00	21.00	1.50	9.00	18.00

Breeders, $5.00 each, any time.

Safe arrival and satisfaction guaranteed on all queens to all points in United States and Canada. Queens for export are carefully packed in export cages; but safe arrival is not guaranteed. Bees by the pound guaranteed within six days of Mathis, Tex. If queen is wanted with bees by the pound, add price of queen wanted to price of bees. Better let me book your orders now.

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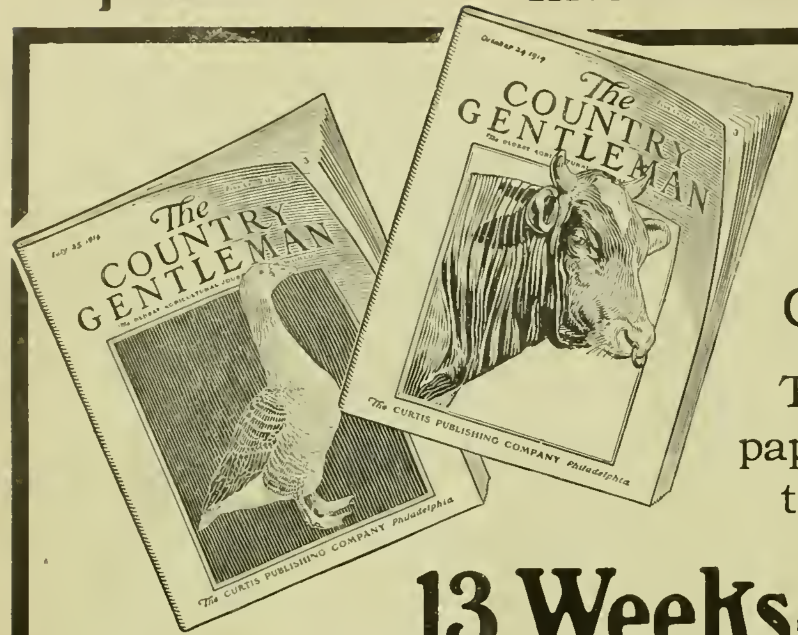
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AMERICAN BEE JOURNAL

MARCH 1915

Beekeepers' Meeting at Faenza, Province of Bologna, Italy, September 9, 1913

(Read "Notes from Abroad")

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.

STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
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Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

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Select tested	2.00	10.00	18.00	1.50	8.00	15.00
1-lb. pkg. bees	2.00	11.00	21.00	1.50	9.00	18.00

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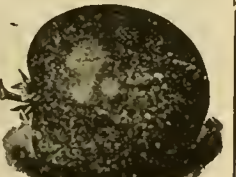

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TRIAL OFFER *We will send THE FRUIT BELT to your address for the remainder of this year, upon receipt of Thirty Cents, and we will send to you, by return mail FREE, a trial packet of Rowe's Grand Rapids Market Tomato seed. Don't delay, the stock is limited. Address - -*

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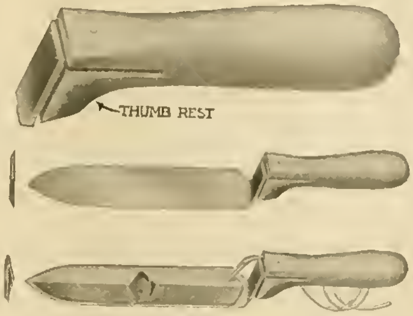

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Extra long " ... .85 " " 24 "
Steam heated with 3 ft. tubing .... 2.50 " " 36 "

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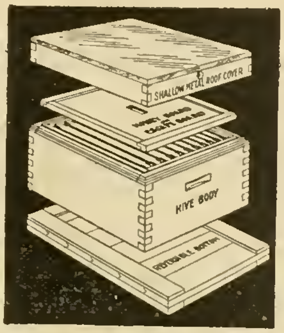

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A combined Section Press and Foundation-fastener of pressed steel construction

This machine folds or forms comb-honey sections and fastens top and bottom comb foundation starters all at one handling, thus saving a great amount of labor. It can be arranged for any width, 4¼x4¼ or 4x5 section. Other sizes, 50 cts. extra for special adjustment. Top and bottom starters insure the comb firmly attached to all four sides, a requirement to grade fancy. Increase the value of your crop by this method. If you have but ten swarms of bees you cannot afford to be without one, is the statement of one customer. Send for special circular, ten illustrations.

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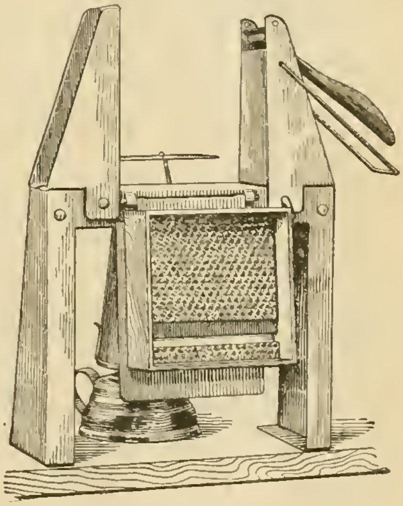

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Italians, the pure three-banded stock from imported mothers. Carniolans, the pure dark grey stock from Carniola. Queens will be ready to ship early in March. No disease. Prices, 75 cents each. $8.00 per dozen.

Circular free

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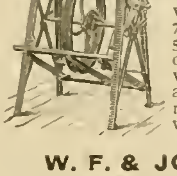

Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap. 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it." Catalog & price-list free

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W. T. Falconer Mfg. Co., Falconer, N. Y.

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Surest Protection for Bees Increased Supply of Honey—
The Best Hive for any Climate
Furnished in the clearest of lumber in either Cypress, White Pine or Redwood

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Admits fresh air into the hive, lessening the chance for swarming, and giving renewed energy to the bees.

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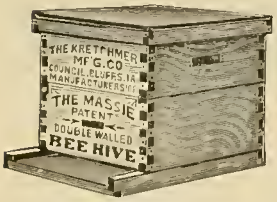

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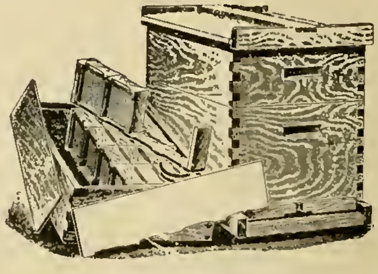
For Comb or Extracted Honey



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First importer of these races from their native lands; 31 years' experience with Carniolans, 12 with Caucasians; resided and traveled in Carniola, Austria four years, giving my whole time to queen rearing; spent several months in bee explorations in the Caucasus, Russia Untested queens, $1.00; five for $4.00. Tested, $2.00 each; all from select mothers imported direct from apiaries personally inspected by myself. Imported queens $5.00 and upward. For Japan, Australasia, and South America add one-half to above prices. Safe arrival guaranteed anywhere in the world.

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Queens and Bees

Our queens and bees are from the best imported Italian stock. Unexcelled for gentleness and honey. Ready April 1.

One untested queen, 75c; 6, $4.25; 12, $8.00. ½ lb. of bees, 90c; 1 lb., $1.25. If a queen is wanted with the bees, add the price. Safe arrival and satisfaction guaranteed.

N. FOREHAND & CO.,
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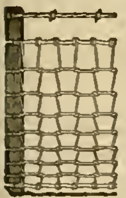

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KITSELMAN BROS. Box 85 Muncie, Ind.

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FOR SALE AFTER MAY 1

This stock of bees does get the honey when there is any to get. One untested, $1.00; 6, $5.00; 12, $10.50; 25 $25.50; 50 $46. One lb. of bees with queen, $3.00; 2 lbs. with queen, $5.00. All queens are mated and laying before sending out. No tested queens for sale. The above prices must be doubled when sending queens to foreign lands. If queen arrives dead, send it back and get another or the money. No checks accepted in any case. My former address was Cato, Ark.

Address, J. B. ALEXANDER
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Not coming, but here to stay. Best bee for any climate; purest of the pure; long tongued, (6 66 mm.) therefore, can work Red Clover. Imported my original pure mountain queens for foundation stock; no admixture of Persian blood.

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I rear only the kind of queens that are sought for and demanded by successful beekeepers. Get your orders booked early. Cash with order. Satisfaction guaranteed. Uuntested queens, $1.00 each; $9.00 per doz.; $75 per 100. Choice tested, $1.50 each; $15 per doz. Breeders, $3.00 to $5.00 each.

C. S. ENGLE
Beeville, Bee Co., Texas

The Beekeepers' Review

The Review is now owned and published by the beekeepers themselves; in fact, it is the honey producers' own magazine, wholly devoted to their especial needs. We buy supplies for our subscribers, and help them to sell their honey without cost, there being a department where names of those having honey for sale are listed free of charge. Also, if you have bees for sale, there is a department where we list you without a cent's cost. If you want to buy honey, there is a department where you can be listed without charge. Other departments contemplative. If you have beeswax you want made into foundation, we save you money on that. The fact is, the Review's main object of existence is to help its subscribers. As we own it ourselves, why shouldn't it be?

We are just making a special offer to new subscribers, in as much as we are giving away the last eight months of 1914 to all new subscribers for 1915. Those back numbers contain many valuable contributions not found in any other publication. Just listen to a few, not having space here to mention them all: Beginning with the May number Mr. Adrian Getaz gives his experience on preventing swarming; size of entrance to use; home rearing of queens; short cuts in finding queens and other subjects. You should read this. Then there is a two-page article by Wilder, describing his management of 3000 colonies in 50 yards. The fact is, there are nine articles from Mr. Wilder in those back numbers and more to follow. Those articles are not published in any other magazine. You should read them. Then there are several articles from Pearce, telling of his system of managing bees in the production of comb honey without swarming, with only two visits a year. Would you like to know how it is done? Then there are field notes from Michigan, Tennessee, Iowa, Colorado, telling of things done under different conditions. Those will interest you. Then there is the Secretary's corner; there the National Secretary tells his experience, and "boosts honey." These are just a few of the good things you will receive for your dollar by subscribing for The Review. Besides all this, you will get ALL the fine articles written for the National convention at St Louis in 1914, and during this year all the papers read at the Denver meeting this month will be published in The Review, and nowhere else. The Review is mighty fortunate in having so much available material in sight. You cannot know too much about your business, and these 20 numbers we are offering you for a dollar will help you wonderfully in your future beekeeping. Address your own paper.

The Beekeepers' Review, Northstar, Mich.

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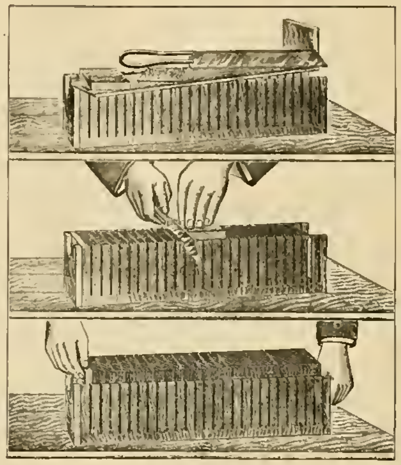

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G. B. LEWIS COMPANY, Watertown, Wis.

AMERICAN
BEE JOURNAL

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., MARCH, 1915

Vol. LV..—No. 3

EDITORIAL COMMENTS

European Foulbrood

While attending a beekeepers' convention in Ontario last year, I met Mr. Irving Kinyon, of New York State, who spoke about having had extensive experience with European foulbrood in the apiaries of Mr. P. H. Elwood, some years ago. Mr. Elwood, who was president of the National Association when I was its secretary some 25 years ago, is one of the largest, if not the largest, among the producers of honey in the world. His experience on bee subjects is therefore interesting and valuable. We secured an article from his pen, which appears in the contributions this month. It is the more worthy of attention because Mr. Elwood does not seek publicity and modestly disclaims any positive knowledge. He simply tells what he has experienced on a very extensive scale.

Equalizing Colonies

Some of our practical beekeepers disagree upon the advisability of helping middling or weak colonies with brood from strong and populous hives in spring.

We believe there are good arguments on both sides. Is it not a mistake to give help to a colony whose queen is of little or no value, and which will probably not be worth anything until the queen is exchanged?

On the other hand, if we have a prolific queen in a weak colony which is struggling to make some headway, is it not possible to make this colony valuable by giving it a comb of hatching young bees in time for the active season of laying?

Much depends upon whether we have time to give the weak colonies a little attention. We must also beware of giving young brood too early or in very cool weather to a weak colony, as it may not be able to take care of it.

Some people prefer to unite weak colonies to others in the spring. It is well if they have no queen, or if the queen is worthless. But uniting decreases the number of our colonies, and sometimes an apparently weak colony may show good results if it is only given help at the proper time.

Texas Foulbrood

The January number of the Southern Texas Truckgrower's Journal, contains an article by Mr. E. G. LeStourgeon, of San Antonio, appealing to the beekeepers of Texas, to urge the need of an appropriation for bee inspection work. We trust this may be successful. Mr. LeStourgeon is a large producer and is fully acquainted with the dangerous possibilities of a spread of foulbrood in Texas. The Texas beekeepers should act in unison.

Honey Plants and Their Value—Honey Weather

At the suggestion of an editorial in the April, 1914, number of the American Bee Journal, page 116, Dr. L. H. Pammel, State Botanist of Iowa, has undertaken an exhaustive study of the different honey plants, whether useful crops or weeds. A circular has been sent to beekeepers throughout Iowa. Thinking that we might help a little in this work, by referring it to a number of leading honey producers, we sent a request for answers to these questions to some 25 large honey producers or investigators. 19 of them have replied, and we here give a synopsis of their answers. Ten of them live in Iowa, 5 in Missouri, and 4 in Illinois. The replies are probably a fair representation of the views of the apiarists of the Upper Mississippi Valley concerning honey plants, both wild and cultivated, and their value.

During what months of the year is honey production most plentiful? Thirteen show crops lasting from early June until late September, with an intermission either in July or August. Five have only one crop, lasting through June and July.

What kind of weather seems most to stimulate nectar production in plants, and what is the effect of high or low temperature, rain fall or drouth on the amount of honey produced? Sixteen answers give warm moist weather, with electrical disturbances, one wants clear and bright weather, one medium dry. Nearly every answer favors high temperature as best, 80 to 100 degrees. Two men hold that below 70 degrees and above 100 the flow decreases. Several report occasional crops in cool weather.

What is the effect on the quality of the honey? Honey is thicker and ripens better in high temperatures. Dry air is best. Rain washes the blossoms and causes a production of thinner nectar. Slightly cloudy weather makes more honey. Clear weather makes better honey.

What relation have you noticed between the soil on which the plants grow and the quality or amount of honey produced? Three prefer a clay soil. Two want a rich soil. Two say that Spanish-needles need rich moist land. Two want clover on high land. Two on low land. Two say that any soil is suitable which is suitable to the plant. The others have no choice.

What is the relation of the distance apart between the hives and the plants and the amount of honey produced? The consensus of the replies is that the farther they have to go, the less is the amount of honey gathered. One mile good, 2 miles fair, 3 to 4 miles poor. One man says it depends upon the weather. One man's bees fly over a part of the city of St. Louis and across the Mississippi and fill their hives, traveling over 2 miles.

What is the usefulness of bees in the production of fruit and seeds? Eight say that bees are a great aid, that there is no fruit when bees cannot work on the blossoms. Two report that clover fields, close to large apiaries, far outyield other fields in seed production. One reports fruit trees entirely barren until bees were secured.

Have you experienced injuries by bees to fruits? Seventeen say: Not if the fruits are sound. Grapes and peaches are easily damaged by wasps and birds.

The planting of what farm crops do you recommend, and what garden plants and trees? Seventeen alsike, 15 sweet clover, 9 buckwheat, 6 white clover (white clover being volunteer), 5 alfalfa, 2 red clover, 1 mustard, 1 cow peas, 1 Indian corn, 1 catnip, 1 spider plant, 7 fruit trees, 1 gooseberry.

What shade and ornamental trees? Seventeen basswood, 7 maples, 6 black locust, 3 willows, 3 box elders, 2 elms, 1 cottonwood, 1 honey locust.

What apiary problems would you suggest as most important for investigation by the experiment station? Four foulbrood eradication, 3 swarm prevention, 3 how to get strong colonies early, 2 queen selection, 1 cost of production of beeswax, 1 wintering, 1 cause of European foulbrood, 1 securing shorter corolla in red clover, 1 testing hives of different sizes, 1 solving the marketing problem. Also testing sweet clover for soil treatment, testing foreign honey plants, finding some honey plants that will bloom from midsummer until frost.

In the list of honey plants under the three groups of: 1 especially important, 2 furnishing an appreciable amount of honey, and 3 visited by bees but of negligible production, the following votes were cast for each plant named:

	1	2	3	Pollen
White clover (*Trifolium repens*)...	14	4		4
Alsike clover (*Trifolium hybridum*)	14	2		4
Basswood (*Tilia americana*)........	12	7	1	2
Spanish-needles (*Bidens aristosa*)..	10	4		5
White sweet clover (*Melilotus alba*)	9	4		11
Smartweed (*Polygonum pennsylvanicum*), also called hearts-ease	8	5	4	2
Dandelion (*Taraxacum officinale*)..	8	6	4	10
Lady's thumb (*Polygonum persicaria*)........................	5	1		1
Blackberry (*Rubus sp.*).............	3	3	7	5
Willow (*Salix sp.*)..................	3	7	7	8
Yellow sweet clover (*M. officinale*)	3	4	7	3
Catnip (*Nepeta cataria*)............	3	6	8	1
Aster (*Aster sp.*)..................	3	4	5	1
Apple (*Pyrus malus*)................	2	9	7	6
Black raspberry (*R. occidentalis*)..	2	6	8	4
Plum (*Prunus sp.*).................	2	5	10	8
Garden cherry (*Prunus cerasus*)....	2	5	9	6
Coral berry, buckbush (*Symphoricarpos occidentalis*)...............	2	5	2	2
Willow herb (*Epilobium angustifolium*............................	2			

The following plants were each given one vote in the first group and a number of votes in the second and third group: Soft maple, hard maple, pear, Indian corn, red raspberry, horsemint, common milkweed (*Asclepias syriaca*), nodding smartweed (*Polygonum lapathifolium*), wild black cherry, gooseberry (garden), black mustard, motherwort, large goldenrod, wild parsnip, butterfly weed (*Asclepias tuberosa*), red bud, stinking clover (*Cleome serrulata*).

The following were classed in the second and third list with 7 to 2 votes in the second list: Buckwheat, Missouri gooseberry (*Ribes gracile*), strawberry, red clover, boneset, sunflower, pumpkin, hawthorne, ironweed, vervain (*Verbena stricta*), prunella, alfalfa. The last named is mentioned as rarely yielding honey in this region.

The following are considered as indifferent honey producers, with one vote each in the second group: Melon, grapes, dogwood, elder, smooth goldenrod (*Solidago serotina*), choke cherry, figwort, Juneberry, swamp milkweed (*Asclepias incarnata*), black haw, red currant.

The following are placed only in the third column: Rape, partridge pea, buckthorn, hollyhock, mallow (*Malva*), Indian hemp, whorled milkweed (*Asclepias verticillata*), redberry elder, Canada goldenrod, fleabane, rosin weed, bachelor button, cucumber, box elder, tulip trees, honeysuckle, mignonette, wild senna, flax, borage, hedge nettle, pennyroyal, snowberry, purple cone flower, tickseed and wild cucumber.

The following are mentioned for pollen alone: Charlock, sweet alyssum, stinkweed, mountain mint, elm, hackberry, walnut, cottonwood, oak, hickory, poppy.

Red clover is mentioned as irregular in its yield, owing to the length of its corolla. The Italian bees are credited as working best upon it. Alfalfa is not a reliable honey plant in either of these States. Linden is irregular in its yield. The different persicarias seem to be confused under the name of hearts-ease, which is not accepted by botanists. Several of the genus polygonum are reported as equally good honey producers.

The pollen-producing qualities were overlooked by several of the writers. Otherwise there would be a still better appreciation of this function. It is noticeable that only a few plants are regarded as not furnishing pollen to bees.

It would be interesting to ascertain what the verdict would be if this matter was submitted to a greater number of men.

Honey in Dentistry

In Egypt, 3427 years B. C., the "Papyrus Ebers" gave for toothache a prescription composed of equal parts of the fruit of the doom-palm, green lead and honey.

Rhazes, an Arabian physician, advised filling carious teeth with a cement composed of mastic and honey.

Attempted Legislation

In the House of Representatives of Idaho, a bill was introduced against bees as follows:

"No person, firm, association or corporation shall locate or maintain any hive or colony of bees within 100 yards of the property of any person, firm, association or corporation without first obtaining written consent of such property owner.

"Any person or firm, corporation or association violating the provisions of this act shall be deemed guilty of misdemeanor."

The member introducing this bill is not aware of the court decisions long ago passed against such legislation. On June 22, 1889, the Supreme Court of Arkansas decided that:

"Neither the keeping, owning or rearing of bees is in itself a nuisance. Bees may become a nuisance in a city, but whether they are so or not is a question to be judicially determined in each case."

Honorable George W. York, the former editor of the American Bee Journal, is a member of the Legislature of Idaho, and he helped see to it that this law was not put upon the statutes of Idaho. Even though the law were void, it might have been the cause of unpleasant and expensive litigation.

Kinds of Queen-Cells

Examine the combs in a bee-hive, and they will be found consisting almost altogether of six-sided cells of two sizes; the great majority being worker-cells, measuring five to the inch. If the bees have been allowed their own way, there will also be a considerable number of drone-cells, measuring four to the inch. At the place in a comb where the bees change from worker-cells to drone-cells, there will be found a few cells more or less irregular in size and shape, called accommodation cells. Beside these there will be found, at least at times, a fourth kind of cells, circular instead of hexagonal, and measuring about three to the inch, called queen-cells.

Our present theme is the queen-cell, concerning which the beginner does not always have the clearest information, and indeed those counted authorities are sometimes in error, as when it is said that three worker-cells are blended into one to form a queen-cell.

If we consider the forms of queen-cells, they may be divided into two classes, pre-constructed and post-constructed. A pre-constructed cell is one constructed as an empty cell, an egg being deposited in it after it is built, or at least partly built. Its bottom is such as might be formed by pressing into some plastic material a marble one-third of an inch in diameter, the marble being pressed in half its depth.

A post-constructed cell, when carried to completion, that is, after it has been built out in full and sealed, cannot be distinguished from a pre-constructed one, although in general the pre-constructed one may average a little larger and be a little more fully decorated on its surface than a post-constructed one. But tear away the cell and examine the base, and you will find a radical difference. As already said, the base of a pre-constructed cell is one in which would fit a marble, while the bottom of a post-constructed cell will be found to be nothing more nor less than a worker-cell.

It is not difficult to watch the progress of a post-constructed cell. Remove the queen from a colony which has not already started queen cells, and within 24 hours you will be likely to find several worker-cells whose mouths are slightly enlarged, the outer edge of the cell-walls appearing to be pressed outwards and changed into a circular instead of hexagonal form. The occupant of the cell will be a young larva—rarely an egg—and as the work progresses the part that was originally a worker-cell becomes filled with the royal pap, and the larva is crowded out into the later constructed and larger part of the cell. The post-constructed cell is appropriately so called because all that distinguishes it as a queen-cell is built *after* the cell has been occupied as a worker-cell; while in the case of a pre-constructed cell the cell is plainly started as a queen-cell *before* there is any occupant.

A post-constructed cell is probably never built when a normal queen is at liberty in the hive; and just as certainly a pre-constructed cell is never built in a queenless colony.

Sometimes queen-cells are classed as swarm cells and supersedure-cells; but the line of demarcation between the two classes is none too distinct. Swarm-cells are those found present when swarming occurs, and supersedure-cells when the bees supersede their queen without swarming. But there is no visible difference between a swarm-cell and a supersedure-cell, and it is doubtful that there is any invisible difference. The difference consists in the different uses made of the cells, and there is nothing very fixed about that; for a cell seemingly intended as a swarm-cell may become a supersedure-cell, and *vice versa*.

When a colony prepares for swarming, a dozen swarm-cells, more or less, will be started and occupied. If all goes well, swarming is likely to occur about the time the first queen-cell is sealed. But if, about that time or a little sooner, circumstances become unfavorable for swarming, such as the drying up of all nectar or continued unpropitious weather, then swarming will be given up, and if the ruling queen be young and vigorous all queen-cells will be destroyed. But if the queen be old or in any other way unsatisfactory, then the first hatched virgin will be allowed to supersede the old queen, all other cells being destroyed. Thus the cells originally considered swarm-cells have become supersedure-cells without any change whatever in the cells themselves.

When the beekeeper accidentally or intentionally kills a queen, the bees will promptly start cells to rear a successor, and these cells may properly be considered supersedure-cells. But if this occurs with a strong colony at swarming time, the chances are that a swarm will issue, the supersedure-cells thus becoming swarm-cells.

Left to its own devices, a colony will rarely be found with post-constructed cells, since it probably rarely happens that a queen is killed in a colony unmolested by the beekeeper.

While the difference between a swarm-cell and a supersedure-cell is something that even the most experienced cannot decide by inspection of the cells, yet it is at times important to make such decision. In a certain colony queen-cells are found, let us say. If they are intended for swarming, it may be desirable to destroy them in the effort to prevent immediate swarming. If, on the other hand, the cells are intended for supersedure, then it may be best to leave them. By no possibility can the beekeeper decide from the appearance of the cells, nor indeed can he make a positive decision in any other way, but attending circumstances will usually enable him to make a pretty fair guess. Three factors help to make the guess: The *time in the season*, the *number of cells*, and the *age of the queen*. If it be out of the usual swarming time, if only two or three cells are started, and the queen be old, it is a very safe guess that supersedure is intended. At the usual swarming time, if a dozen cells or so are found, with a vigorous young queen, then it is morally certain that swarming is in contemplation. It should be said, however, in passing, that the number of cells started for swarming varies greatly with the kind of bees. Cyprians, for instance, may start 50 or more cells.

These three factors may be combined in such a way as to make the guess more difficult. The number of cells is probably the most reliable factor. If only two or three cells are found at a time when they are well advanced, then it is a very safe guess that no swarming is intended.

C. C. M.

MISCELLANEOUS NEWS ITEMS

Massachusetts Convention of Beekeepers and Apiary Inspectors.—This convention was held at the Massachusetts Agricultural College, on farmers' week, March 15, 16 and 17. Programs and information can be had at the Extension Service of the college, at Amherst. The inspectors' special meeting on the third day, will be open to all.

In addition to the convention, displays and demonstrations of apiarian implements will be special features. A large attendance of leading beekeepers is anticipated.

Listed below are the titles which have so far been received for the inspectors' conference. The authors have in every case expressed their intention to be present:

"Methods and Duties of Inspectors"—A. W. Yates, Inspector, Hartford, Conn.

"Resistance of Races, Variety and Strain of Bees in European Foulbrood Suppression"—John Shaughnessy, Inspector, Stockbridge, Mass.

"Combatting European Foulbrood; Methods of Control and Suppression"—N. D. West, Inspector, Middleburgh, N. Y.

"Combatting American Foulbrood"—O. F. Fuller, Inspector, Blackstone, Mass.

"Methods and Duties of Inspectors"—A. C. Miller, Inspector, Providence, R. I.

Mr. F. W L. Sladen, of Ottawa, Canada, and Dr. E. F. Phillips, of Washington, D. C., will be present.

◆

National Meeting.—The National delegates met at Denver as announced Feb. 16–18. About 100 beekeepers attended, and an enjoyable time was reported. They were royally entertained by the Colorado Honey Producers' Association, who looked after their welfare and tendered them a banquet.

Professor Burton N. Gates was reelected president, and Frank C. Pellett vice-president. Wesley Foster was elected secretary-treasurer. The Board of Directors for the ensuing year is: E. G. Carr New Jersey, E. J. Baxter of Illinois, J. H. Stoneman of Idaho, E. D. Townsend of Michigan, and Geo. Williams of Indiana. The voting force was represented by 16 delegates. The Executive Committee was instructed to dispose of the Review. The articles of incorporation under the Illinois law were adopted.

We hope to publish a photograph of the meeting in the near future.

◆

Beekeeping in Idaho.—We are in receipt of a copy of the annual report of C. K. Macey, State Horticultural Inspector in Boise, Idaho, to the Governor of that State. Bee inspection in Idaho is under the supervision of the State Horticulturist. We quote as follows from the special report on bees:

Number of apiaries inspected........	707
" " diseased apiaries found..	155
" " colonies inspected.........	21,742
" " diseased colonies found..	1,230
" " colonies treated...........	830
" " " destroyed.........	405
Total number of colonies (estimated)	70,000
Total honey production, lbs., (estimated)...............................	1,555,000
Value of honey crop (estimated)......	$125,000
Shipments of honey out of State, cars, (estimated).....................	30

The year just closed has not been a favorable one for the production of honey, due largely to the frost injury which was experienced the early part of June in many of the honey producing sections. The total output, however, and value of the crop, is practically the same as for the year 1913.

I desire to again call attention to the importance of this industry, not only from the point of production, but also from the indirect benefits to the agricultural and horticultural interests of the State resulting from the presence of the honey bee at blossoming time. The success of the fruit grower depends very materially upon this agency, and it is also a very essential element in so extensive alfalfa and seed growing sections. The industry should be encouraged, not only for its direct value, but in the interest of the fruit growers and farmers throughout the State.

◆

The Ohio Meeting.—The annual convention of the Ohio Beekeepers' Association was held in Columbus, Ohio, Jan. 11 and 12. Although not attended by a large number of the members, a great amount of interest was manifested by those present.

Among the many resolutions was one recommending that the National Association, at their next convention, adopt rules setting forth the standards for the various queens, so as to get a greater uniformity in breeding.

It was also decided to make an association exhibit at the State Fair, where there will be given out honey recipe books and a list of all the members of the association, and if any members have honey for sale this will be indicated together with amount and kind.

Mr. Fred Leininger, of Delphos, Ohio, was elected president for the ensuing year, and the present secretary re-elected. E. R. King, *Sec.*

Athens, Ohio.

◆

Numberless Species of Bees.—In his "Manual for the Study of Insects," Comstock tells us that, "Not only are insects numerous when we regard individuals, but the number of species is far greater than that of all other animals taken together. The number of species in a single family is greater in several cases than the number of stars visible in a clear sky." We must then not be astonished when reading the following, taken from a German work and supplied by our friend, F. R. Bartsch, of Chicago:

The noted mellitologist, Dr. H. Friese, mentions not less than 777 species of bees found in the region of Africa, south of a line drawn from Senegal to Abyssinia. Fifty-three are for the first time described in his book, "The Bees of Africa," recently issued in Jena, Germany. A number of maps show the range of some of the more characteristic genera of bees, both in Africa and in other parts of the world. The number given by Friese for the apifauna of various countries are interesting.

Germany is credited with 440 species; Hungary, 510; Tyro, 380; Great Britain, 200; Sweden, 212; Algiers, 413, etc. Of the number (8000) of bees described, 2000 belong to Europe. The Ethiopian region has, therefore, with about 1200 species, a much poorer apifauna than Europe. The author states that bees are not really tropical insects, but have their optimum area of specification in the north temperate zone.

After examination, it is shown, moreover, that a very large proportion of the genera and species must have originated from the palearctic region, the most southern line of which is given by the Mediterranean and part of the Red Sea. Around the Kilimandjaro and Meru we find still at altitudes of 3000 metres (about 10,000 feet), some purely European forms of Halictus, and a species of Andrena (*A. africana*), which is very similar to *A. helvola* of Central Europe. A similar emigration has apparently taken place from the Mediterranean into the Congo basin.

Dr. Hans Brauns discovered a parasitic species (*Eucondylops konowi*) in the nests of the remarkable bees of the genus Allodape. The latter is found over the Indo-Malayan region, Sunda Archipelago, New Guinea and a part of Australia, but is represented by the greatest number of species in the southern half of Africa, which must therefore be taken as its true home.

Brauns found that the species of the Allodape do not make cells and store their provisions with food for the larvæ; the pupæ and callow bees are all found together simultaneously in the same cavity of a hollow twig. The larvæ have extraordinary foot-like appendages with which they hold the food given them, and they are fed until maturity. It is interesting to know that the parasitic Eucondylops is very similar to its host Allodape, thus showing close relationship.

According to Friese, the Ethiopian apifauna is very rich in certain genera, which are not so well represented in many other parts of the world. The social bees of the Ethiopian region comprise 29 species of Trigona, the honey-bee and four of its sub-species and varieties, Apis Mellifica, A. unicolor-adansoni, unicolor-intermissa, unicolor-friesei, and the typical unicolor. The bumble-bee (*Bombus*) is not found in the Ethiopian region, although it is known to occur in tropical South America.

◆

New Jersey Beekeepers' Association Meeting.—The meeting of the New Jersey Beekeepers' Association was held at New Brunswick, in the Entomology Building of the State Agricultural Department, on Jan. 13 and 14, as previously announced.

Owing to heavy wind and rain on the days preceding the meeting, the attendance was smaller than last year. However, it was more of a get-together meeting than might have been, had the gathering been larger. It is now expected to hold two summer meetings this season, so as to extend the influence of the association more widely.

An effort to frame a law to control the moving of bees and used apiary material into the State was endorsed, and it is hoped to get it acted upon during this session of the legislature.

The advisability of bottling water-white honey was discussed, and universal sentiment appeared to be against it, but in favor of blending so as to secure a standard amber color which can be supplied year after year.

The papers read were of unusual interest, and the talks by Dr. Headlee, State Entomologist, Mr. Carr, secretary-treasurer, State Inspector, and others were most instructive and interesting. W. W. Case read a paper entitled, "Reminiscences,' which pleased those present immensely.

Dr. E. F. Phillips, of Washington, D. C., being an honorary member, was delegated to represent the association at the National meeting at Denver.

The 1914 officers were re-elected in a body. President, C. H. Root, Red Bank; secretary-treasurer, E. G Carr, New Egypt, etc.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Wonderful Tales

The wonderful tales related in the November number were the occasion of the following note:

"Dear Miss Wilson:—Your article on 'Wonderful Tales,' in the November Bee Journal, impels me to send the enclosed:

"You will enjoy 'I moved several hives under the mock orange bushes, and had what I hoped for, an orange-flavored honey;' and 'queen bees bringing from $5 to $30 (? ?) each.'

"Very sincerely yours,
"Another bee woman,
"Elgenia B. Bixby."
(Mrs. J. D. Bixby.)

Be it known that Mrs. Bixby is the wife of J. D. Bixby, editor of the Western Honey Bee, official organ of California State Beekeepers' Association.

"The enclosed" was the newspaper story of a girl who begins by saying: "I suppose I am the only girl in the world who ever asked for a hive of bees as a graduation present."

She got her bees, and the story of her career is so rich that it seems too bad not to share it with our readers. She says in part:

"I rapidly increased the number of hives, each one netting me 50 pounds of honey. The old raspberry bushes in our garden gave a distinct raspberry flavor to the honey of the bee-hives nearest them. My customers went wild about it.

This gave me an idea. I moved several hives under the mock orange bushes and had what I hoped for—an orange-flavored honey. These brands were labeled 'raspberry honey' and 'orange honey,' and were so much in demand that they were always sold far ahead of production. All the honey was attractively boxed. This I found no trouble, and, indeed, it was a pleasure, as was all my beekeeping, and the cost was very little.

"Before 'swarming' I always had the new hives ready, and learned to 'swarm' the bees artificially.

"I studied hive making also, finding it economical and easy to make my own hives, the parts coming ready to set up. Artificial wax was used, thus saving the time of the bees for the more profitable honey gathering. Then I learned how to produce 'queens,' and here was my real profit, queen bees bringing from $5 to $30 each. I have quite a reputation as a queen raiser, and make a large income in this way.

"Finally one of my friends asked me to lecture before the Friday Morning Club on 'The Bee and His Interesting Habits,' and that opened another field and one equally enjoyable.

"I now give many lectures on bees before clubs and at schools. Children are taught about this interesting little insect as part of their 'nature work,' while older children are enjoying the bee in history and literature. My greatest success, however, was in being asked to give lessons in beekeeping at the State College of Agriculture.

"I have plenty of time for studying, lecturing and teaching, as the actual work of keeping bees occupies very little time. I have taken up photography so that I can illustrate my lectures and lessons from pictures of my own hives.

"I began rolling up quite a bank account—30 cents a pound for fancy honey, 50 pounds to the hive; queen bees averaging $30 each; lectures $25 to $50."

* * *

A Letter from Denmark

"I got the bee-fever last winter to a very high degree, and I decided to buy a piece of land and start an out bee-yard on a larger scale. But for different reasons I did not get it realized last spring, and just as I had got it fully decided and was going to carry it out, the fearful war broke out, and everything was stunned for this year.

"I am owner of 30 hives, of which 20 are in my home yard here in town, while 10 are in the country. We have never such immense yields as Dr. Miller or as are common in America. Once in a great while a colony may yield 160 pounds, but the average is 20 to 30 pounds. My best colony gave this year 61 pounds. Our main flow comes from white clover and field mustard (*Sinapis arvensis*), a weed that grows in abundance in our oats and barley fields. Later comes alfalfa, and from Aug. 10 to away into September the heather (*Calluna vulgaris*).

"My bees are Italians mixed with Carniolans. Several years ago I abandoned our native black bees; they gather more honey from the heather than the foreigners, but less from the earlier flowers, as they do not breed up as strong or early as these.

"The heather honey is dark, almost brown, quite strong, and of a peculiar flavor, consequently is not much in demand on the market. Besides those four main flowers mentioned before, both alsike and red clover and a great profusion of wild flowers grow here.

"We do not use sections; all our honey is extracted and granulated. It is usually of a fine light yellow color and of excellent flavor.

"I read in the October issue that the honey market in America also has suffered from the panic caused by the war, but I am sure not like in Denmark or on our own little Island. (Bornholm is only 15 by 27 miles, and 40,000 inhabitants.) We lie so isolated and yet so near the very edge of a human volcano. Some beekeepers sold their honey at a low price, but now the demand is about normal and also the price. The price of fine ripe honey is 20 to 22 cents per pound.

"Anna Sommer.

"Ronne, Bornholm, Denmark, Nov. 6, 1914"

Some of our Scotch friends will probably read with surprise that heather honey is of such character that there is little demand for it. It does seem strange that there should de such a great difference in honey grown from the same plant in different localities. Throughout the continent it is perhaps much the same as described

ANNA SOMMER IN HER APIARY IN DENMARK

by Miss Sommer in Denmark, while in the British Isles, especially in Scotland, it is of such fine character as to command the very highest price.

We shall certainly hope to hear more from our Danish sister.

Notes from Foreign Bee Journals

Mrs. Louise Schinko, in Bienen-Vater, recommends sticky fly-paper as the best means of getting rid of ants. After a few are caught the rest seem to be frightened away. But if they are frightened from one hive only to attack another the gain will not be so great. But fly-paper may be used to prevent ants from climbing up the legs of bee stands.

Mrs. Barth, replying to a question in Schweizerische Bienenzeitung, says she has kept pinks for 30 years, and never have bees injured the blooms, and indeed she thinks it doubtful that bees ever visit them, although flies resembling bees settle upon them. We have had rosebuds, not full blown roses, badly torn to pieces by the bees in some years. It looks as if they tore them to pieces to get at the pollen not otherwise attainable.

Honey Puffs

One cupful of cream, 3 cupfuls of sugar, ¼ cupful of honey, white of one egg, 1 cupful of chopped nut meats.

When the cream and sugar have been boiled without stirring until the threading stage is reached, add the honey. When the syrup will make a soft ball on being dropped into cold water, take it from the fire and beat into it the well-whipped white of an egg. Add a cupful of chopped nuts. When firm and creamy shape into balls.—*Country Gentleman.*

Honey in Idaho

The "Idaho Club Women" calls Idaho "The land of the honey bee," and says:

"Sixty-seven thousand dollars worth of honey was produced in the Idaho Falls district within the last 12 months.

"The business has reached such proportion that Idaho Falls is now headquarters for the Idaho Honey Producers' Association of 165 individual producers. There is also located here a large corporation engaged in the manufacture and handling of bee supplies, who are heavy shippers of honey, as well as producers of the product on a considerable scale. This industry is a great factor in southern Idaho."

Entering Beekeeping Whole Heartedly

"I wrote you one year ago, telling that I had just purchased a 3-frame nucleus and queen (Italian bees) from Dadant & Sons; also asking questions which you answered in the September Bee Journal. I now have eight thrifty colonies. One of these was an immense swarm of black bees that I caught, and later introduced a splendid Italian queen.

"I find ready sale for my honey right here at home, as there are very few beekeepers in these parts. I took off my fall honey about Oct. 15, and have very little of it left. I sell it in sealed pint jars, with my own labels. I also bought an extractor, which I know will pay for itself in the spring. With the wax cappings I made vinegar, which was quite nice. All the bits of wax that I managed to rake and scrape I have sold to the shoemaker, as every bit helps.

"I have one colony domiciled in an observation hive, which is surely a source of pleasure to us all.

"I have joined the State and National Beekeepers' Associations.

"The greatest enemy to bees in Louisiana is the bee-moth; it bothers mostly where bees are kept in box-hives and common bees at that.

"Mrs. W. B. Harp.

"Napoleonville, La."

You ought to be congratulated upon the whole-hearted way in which you enter beekeeping.

You do well to cultivate your home market. Right or wrong, people are generally prejudiced in favor of honey produced in their own locality.

There Was a Reason

She drank the fragrance of the rose,
That she held closely to her nose.
Away she cast it; so would you;
She found a bee was drinking, too.

—*Exchange.*

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Montana Beekeepers Organize

The Montana State Beekeepers' Association was organized at Bozeman, Mont., Jan. 30, 1915, with a charter membership of 20. Dr. Gopenhafer, of Helena, was elected president; Mr. Bell, of Elso, vice-president; Percy F. Kolb, of Billings, secretary-treasurer,; and B. J. Kleinhesselink, of Big Timber, and S. F. Lawrence, of Hardin, as members of executive committee.

Through the efforts of Prof. R. C. Cooley, State Entomologist, the services of the writer were secured for six short course lectures on beekeeping. The lectures were attended by from a dozen to 30 at the different sessions. The evening illustrated lecture, "Beekeeping Among the Rockies," was attended by about 250.

Each afternoon a round table discussion was held which brought out many interesting points.

A legislative committee was appointed by the president to work for the passage of an apiary inspection bill that was drawn up by Prof. Cooley and the committee. The bill, as drawn, combines the most valuable features in a number of inspection laws, especially the Texas law. Those present were quite hopeful that the bill could be put through the legislature.

The secretary-treasurer, Percy F. Kolb, was instructed to begin negotia-

S.F. Lawrence
Percy Kolb
Prof. R. A. Cooley
B.J. Kleinhesselink
Dr. Copenhafer
Mr. Beitenhof

Some of the Montana beekeepers who were influential in organizing the Montana Beekeepers' Association at Bozeman Jan. 30, 1915.

tions for the cooperative purchase of bee supplies. It was thought possible that a carload might be purchased.

The association adopted the standard, 4¼x4¼x1⅞ inch section as the standard for the association, and also the double tier shipping case.

It was interesting to note that the majority are using the 4x5 plain section; but realizing that uniformity will be necessary when carload shipments of comb honey are to be made, which will be very soon, they voted unanimously for the standard section. Some of the members will begin at once to change their equipment.

The Montana association voted to affiliate with the National Beekeepers' Association, and elected Mr. S. F. Lawrence delegate and Percy F. Kolb alternate to the National convention in Denver.

The Montana association starts off under very auspicious circumstances. It is made up of men who are bound to make a "go" of it and do much for Montana beekeeeping.

One provision that will help out the treasury of the association is that the executive committee may assess each member up to 5 cents per colony each year. One cent per colony was assessed at organization, and paid in as a protective fund. This assessment can be used only for special protective purposes.

SEVENTY BEEKEEPERS AT THE LUNCHEON GIVEN BY THE COLORADO HONEY PRODUCERS' ASSOCIATION AT THE AUDITORIUM HOTEL, DENVER, DEC. 29

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Dysentery Shows First in Italians

Bees are wintering none too well here, and many colonies living on natural stores are in need of a flight. Sorry to have to say so, but as usual in our apiaries the Italians are the first ones to show signs of dysentery when poor stores are in the hives.

Much Snow But Nice Weather

We have had nice winter weather for the past month, and to date, Feb. 9, we have not had nearly as severe weather as last year. There is a large amount of snow, which will be good for the clover; in fact, we have probably more snow on the level than for a number of years. I say "on the level" because, as a rule, since the forests have been cut down our snow lands in the roads and other places where buildings and fences catch it as the wind drives it along.

About two weeks ago we had over a foot of snow at one fall, and right after it a light rain. This froze and formed a thin crust that ended chances of drifting.

Is Fall Feeding of Sugar Syrup to Be Discouraged?

Professors Jager and Bartholomew may be right as to the effect of sugar feeding, page 53. In fact, they must be right or they would not make the claim they do. But I insist that the bad effect of feeding sugar syrup to bees in the fall, even feeding lots of it year after year, is so small as to be only noticeable to a *scientist*. I do not wish to pose as a defender of wholesale sugar feeding. I would gladly feed none at all if always sure that the honey was all right, but experience has taught us that in our northern sections properly made sugar syrup is the very safest food that can be given to bees *for wintering*. This year the great majority of our bees have no sugar syrup stores, and I fear we will regret it before spring.

As an instance that the bad effect of feeding good syrup in the fall in large quantities, is insignificant, I will cite the case of one our very best known beekeepers in Ontario. He runs hundreds of colonies, and always manages so that in the fall the brood-nests have very little honey. He feeds every colony about 20 pounds of sugar, which means 30 pounds of syrup for winter stores. He has averaged that amount to each colony every fall for at least 15 years, and I would like to take the two professors to these apiaries at any time of the year, and ask them to detect any kind of weakness in these bees, caused by the heavy sugar feeding. This man is one of our best winterers *always*; and his crops are probably second to none in the province.

I feel positive that *early spring* feeding of sugar syrup rapidly tells on a colony, but as for fall feeding, the man in our country who follows the practice is the one who will come out ahead in wintering, one season with another. Nothing is better than *good honey* for wintering, but, unfortunately, we often get some honey in the hives that will cause trouble every time in places where no flight is possible from Nov. 1 until late in March, as is often the case here.

Spreading Frames for Wintering

Mention is made on page 66 of taking one comb out of a brood-nest for wintering and spreading the remainder further apart. H. G. Sibbald takes two frames out of a 10-frame hive before feeding heavily for winter. The eight combs are "bulged out" so that only the regular space is left. In the spring he gradually forces these combs back into normal position, and the bees remove the stores to get the proper space again.

The fact that he does this work and says it is all right makes it safe to try, for Sibbald "does things." When the bees are making room between the combs at the top, they move the stores, and "stimulation" of the best kind is provided.

That Iowa Report

Our thanks are due to Frank C. Pellett for a copy of the inspector's report and proceedings of the Iowa beekeepers' convention. I think this is the best effort in that line that I have yet seen, and is well worthy of the State it represents and of the men who were instrumental in its publication.

Best Wishes to Former Editor York

Pleased and surprised to learn that our mutual friend, George W. York, is now State Representative for Idaho. Not "surprised" because I did not think he could fill such a position with honor to the State, but because I did not know he was running for office. A personal letter from him at Boise, reminds me of the many friendly chats we had by letter when he was editor of this Journal, and of the good time at Detroit when we "bunked" together for three nights during convention. Our best wishes go out to him in his new field. I feel sure that hosts of readers of the American Bee Journal will join in these felicitations.

Byer's' 'Cashel" apiary; hives facing west—Same direction that the land slopes.

High Board Fences About an Apiary for Protection

An 8-foot fence around an apiary is the subject of a short debate in Gleanings in Bee Culture between the two well known veterans, J. E. Crane and R. F. Holtermann. Mr. Holtermann deems these fences "almost imperative" in places where no other shelter for the bees is available, while friend Crane speaks of a yard being "hopelessly ruined" in the spring because of one of these fences. I hope they will pardon me for thinking them both extreme in their views. I dislike such a fence, and at the home yard I have repeatedly seen hundreds of bees fall on the north side of a board fence during days when the sun was shining brightly and a cold north wind blowing. They would fly to the north side of the fence, the wind would strike them and down they would go.

But I can hardly imagine things so bad, that the apiary would be ruined from this cause. Natural shelters, as orchards, evergreen hedges or forests, are much better, but as Mr. Holtermann says, these are not always available. As to the fences being imperative for wintering, it would be a toss up for my decision. I want some kind of shelter when working at the hives in the summer. Any one who has wrestled with a quilt trying to get it to stay on the hive until the cover was in place, can well understand this, especially if the wind is blowing about 40 miles an hour.

Within three miles of my home is an apiary that has wintered outside for 30 years or thereabouts, and always winters as well as the most sheltered apiaries. Yet this yard is in a field, exposed to the west, north and south, with buildings on the east. After watching this exposed apiary year after year, I wonder if we do not sometimes over-rate the value of windbreaks for winter protection. Yet I like a protected apiary for solid comfort, with the hives situated under large apple trees. It is the ideal position.

Another Byer apiary. Natural shelter, bush and high land, surround this apiary, with good drainage to the south.

North Carolina as a Bee Country

A subscriber from England asks, page 64, Feb. 1, whether North Carolina is a good bee country. I have never been there, but my father has "wintered" for two years not far from Asheville, that State, and is there now. He thinks it a beekeepers' paradise. His letters during winter sometimes make me wish I was there, but when the "good old summertime" comes, the land of the Maple Leaf is good enough for me. From what he tells me, the mountain slopes have wonderful bee pasture, and it is undoubtedly a first-class bee country.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Iowa's Annual Report

We are in receipt of Mr. Frank C. Pellett's Annual Report as Bee Inspector of Iowa. It is a most interesting work, containing besides his personal report, which is excellent, many valuable papers by leading bee-men and working scientists. The Report is beautifully illustrated.

Mr. Pellett urges county inspection of bees in his State. This has worked very successfully in California. It seems but just that the counties of a State that are in need of an inspector should bear the expense, as some counties have no bees, or so few that there is no need for an inspector. As Mr. Pellett very correctly points out, inspection can be much more thoroughly done in this way. Our county inspectors here make it a rule to look over practically all the bees in their counties each year. Where disease is known or suspected, every colony is looked through, and every comb containing brood.

This method has met with the hearty cooperation of the beekeepers, and where men of average ability to do competent and conscientious work have been appointed as inspectors there has been little friction. In this way we have to a great extent stamped out American foulbrood.

European foulbrood is new among us, but so far we are holding our ground. It is of course a much harder "proposition" to handle. We are yet considerably in the dark as to how the infection is carried. Requeening seems about the only thing to do, and it is much harder to get a man to requeen than it is to tr at or destroy a few colonies. But we are preaching the doctrine of requeening as hard as we can, and most of our beekeepers are working along that line.

We do not have farmer beekeepers here to any great extent. Almost all of our people are professionals, and are glad to make use of any information in regard to disease and how to combat it. The county bee inspector is in close touch with those whom he serves, and the treating and cleaning up is almost altogether under his personal supervision. In fact, he does a large portion of the actual work in treating and destroying, where destroying is necessary. This is very essential where the beekeeper is either inexperienced or careless.

California, owing to her mild climate, is a continual battle ground between the producers and the myriads of insect and bacterial pests. Almost every known pest attacks our orchards and the horticulturists fight continually to keep them down, and so on through all our productive industries. But the horticulturists, the stockmen and beemen are just as determined in their warfare as are the numerous pests, and we manage to hold our own, but it is at the price of eternal vigilance. We have horticultural inspectors and live stock inspectors in almost every county. So it was an easy matter to get the supervisors of the counties, where it was necessary, to add a bee inspector to the list.

Southern California Notes

The outlook for a honey crop the coming season in California is excellent. There has been an abundance of rain for the advance of the season. The weather has been sufficiently cold to retard a too early bloom of the sages and other wild plants or premature fruit bloom. This sometimes happens in seasons of copious rainfall when the weather is warm; the plants coming into bloom before the bees are strong enough to make use of them.

There are quite a number of buyers here every season in the latter part of winter, from the colder sections of the West, Idaho, Utah and Nevada; also others whose seasons are later than ours. They buy bees and make the increase here, shipping them usually in five or six frame nuclei. This has been quite a business for several years. A good strong colony brought here late in the winter can easily be increased to two or three by May, as bees usually begin to swarm here in the valleys by March. These nuclei are shipped to their permanent location in time to build up for the honey flow there.

BEE-KEEPING IN DIXIE

Conducted by J. J Wilder, Cordele, Ga.

Desires a $1000 Return from Bees Annually

"Mr Wilder:— I want to establish a bee business sufficient to assure me an annual income of $1000. What should I have? And as a starter should I consider planting anything to increase the pasture? Could I increase twofold each year until I reached the desired number? And how many bees can an ordinary apiarist care for?

"Elberton, Ga. O. E. Terry."

An expert apiarist could handle, with but little if any help, 300 colonies of bees well equipped and well located in five yards in your section, and taking one year with another, could realize an income of $1000. If the net income were to be that, above all labor, etc., it would take at least 500 colonies in eight yards with full equipment. This would mean a net income over the investment.

An inexperienced man, of course, could not reach this mark with the business. Beekeeping, like all other lines, must be in good hands, and under good management to expect good returns. Do not think of planting anything for your bee pasture; depend entirely on natural honey sources.

Yes, bees can be increased twofold each season; that is, 100 colonies increased to 200, and at the same time a very good harvest made, if increase is made very early in the season and towards the close, thus holding the bees together as much as possible through the honey flows.

Desires to Locate in Blue Ridge Mountains

"Mr. Wilder:—My plans are to locate in the Blue Ridge Mountains and keep bees, and I want to run them on as near a non-swarming and let-alone plan as possible. How would a two full-depth hive body arrangement do?

"Louis A. Schafer.

"Fowler, Mich."

You can find suitable locations most anywhere in this chain of mountains, either in Tennessee, Georgia or North Carolina.

The hive arrangement you suggest would be very good for that section for extracted honey, for there are two general honey flows there; the first one coming in early spring from locust and other spring honey plants, and the other one in midsummer from sourwood and other summer honey plants, including basswood. The full depth body would probably make ample storing room for the two flows, for after the spring flow, extracting could be done and the empty combs set back on the colonies to catch the next flow.

The high altitude and the climate in this section would most likely appeal to you.

Cross Bees

"Mr. Wilder:—I have a hive of black bees that are so cross that I can't get near them even when they are at work. What should I do with them?

"Cass Station, Ga. H. C. Hagan."

Sometimes bees are dangerous on account of their temper. Very often when I was keeping bees in box hives I had such colonies. I greatly feared them, and sometimes would not dare rob them. I had no bee veil or smoker except a roll of cotton rags from

NUCLEI FOR QUEEN REARING—GAETANO PIANA

which the smoke had to be blown or fanned on the bees. This seemed to be just enough to enrage them. Besides, they were dangerous when not disturbed. More than once I got vengeance by burning a colony. When my first smoker and veil came I had a colony of such bees in a box hive banished to the most remote corner of my land, in an almost impassable place of brush and briers. I put my veil on, got the smoker in fine trim, and went for this hive. I completely covered them with smoke and gave them a *good robbing* and left them to do their worst; then I transferred them.

On this little job the smoker and veil were worth far more to me than they cost. In a few days I ordered an Italian queen, and when she arrived I paid this colony another call, killed its queen and introduced the new one, and the furious black bees rapidly disappeared. I had an altogether different colony of bees in color and temper.

Try my plan on your cross colony.

◆

Fears Ravages of Thieves

"Mr. Wilder:—My bees have done well for a long time, and I now have 100 colonies here, and am thinking of taking 50 colonies to a new location about 4 miles away, near a small town, but no one lives near the location. It is in a wealthy community and they do not want any beekeepers there. I fear damage will be done my bees. Would you move any of them there? Is there any way I can protect them from thieves or keep people from harming them? What should I offer for the location should I decide to move them? Do thieves ever trouble you, and what do you do about it?

"Stanford, Ky. J. M. Ware."

If you expect to make much increase this season, it would be best to move half your bees to a new location. But whether you should move them to the location you have in mind is a question. If it is a very desirable one on account of the great amount of honey plants and convenient to market, you might do so. Be sure the location is on a good and influential man's land, and that he will protect your enterprise on his premises. As to keeping thieves away from your bees, it will be rather hard to do, but signs of warning set up or tacked on trees near the apiary will help some. Watch for them, catch one, make him pay damages in court. This will stop it for the future.

The land owner should not charge you over $10 a year for the location, possibly less. Yes, thieves give me much trouble, and we have lots of them who do damage, destroy and carry away honey each season, or carry off colonies and destroy them.

G. PIANA, BALDUCCI, C. CARLINI, DADANT, PROF. COTINI AT THE PIANA APIARY

HONEY PRODUCING APIARY OF GAETANO PIANA

NOTES FROM ABROAD

By C. P. Dadant.

Faenza, our next stop, is the city where the style of pottery called "faience" originated. There are still several factories of this material there. It is a city of only about 13,000 inhabitants. We reached the hotel late in the evening. The pretty, plump, dark-eyed landlady first gave us a very small room, but when our good friends explained to her what distinguished (?) visitors we were, she broke into a great exclamation, and at once conducted us to what must have been the bridal chamber of the hotel, a large room, with a very high arched ceiling and beautiful wall and ceiling paintings. It looked like a church nave. We have no small churches in America so beautifully finished.

The following day we had a great meeting of beekeepers and a banquet, and you should have seen us trying to talk Italian. However, we had a fine interpreter in Mr. Triaca, whom we kept busy answering questions. After the banquet, Count Visconti made a speech in Italian, of which I understood very little, but it must have been finely appreciated, from the applause it drew. Then a photographer came to make a picture of the meeting, which we give, and after that we had an automobile ride. We traveled some 45 miles, through a pretty country, just at the foot of the Apennines, visited four or five towns and several apiaries. The finest apiaries we saw were those of Gaetano Piana, whom I have mentioned in a previous article and of Lucio Paglia. At the Piana home, the mother was much interested in us, because one of her sons, only 17 years old, had left shortly before for South America. It seemed to her as if she

ONE OF GAETANO PIANA'S OUT APIARIES

HAULING BEES—GAETANO PIANA

was meeting people who might have known her boy. America seems so distant to most people on the continent that they do not realize how far apart are North and South America.

Mr. Piana, a young man of great activity and teacher of apiculture at the Royal Agricultural School of Imola, has several honey-producing apiaries and one for queen-rearing, the latter with 128 nuclei. We give several photos of his bees. They are located near Castel-San-Pietro, Emilia. So is the apiary of Lucio Paglia, who is an old and experienced breeder and shipper of queens. I was greatly interested in examining the bees, which, as in all other parts of central Italy, are of great regularity. I opened hive after hive without smoke and without angering the bees.

Since coming home, I have had an extensive correspondence with Mr. Piana, and have received a number of fine queens from him. I must say that his shipments were the most successful of any that I have received by mail, from so great a distance. Were it not for the war which put a stop to all security in the quick transmission of mail, we would have had some very interesting experiences, both with Mr. Piana and Mr. Penna, in testing the mailing of queens across the ocean.

Mr. Piana has also informed me concerning the color of Italian bees throughout Italy and on both sides of the Apennines. There are very slight differences, but the yellow bands are everywhere apparent. The Riviera is the only exception. As to the bees of Sicily, they are of very dark color and as small as the African bees, but reported very peaceable.

Piana introduces his queens into the nuclei, just after they are hatched, with the help of tobacco smoke. Indeed, the use of tobacco smoke seems universal in Europe. I have no desire to commend it, for I do not use it myself, but the fact forced itself upon me. In Germany they sell a special pipe for use in the apiary.

The braula coeca or bee louse is common in Italy, and I saw several specimens of it. But this was nothing new to me, for I have often seen them on imported bees and queens. They are so large that they cannot fail to be noticed, and are easily removed from the body of the queen. Professor Bovelacci, of Forli, who was with us and whom I will have the pleasure of introducing a little farther along, assured me that the louse is picked up by the bees on such blossoms as the sunflower. His reasons for this statement I do not know. He is a well informed man.

Some of the honey resources of central Italy are similar to ours. They have plenty of alfalfa, which they call "erba medica." The scientific name is "medicago sativa." This appellation is derived from the alfalfa having been originally imported into Europe from Media, in western Asia. They have another genus of the same family which they call "lupinello," a variety of the lupine, much grown in southern Europe, in poor soils to enrich them.

But the best plant of all is the esparcet or sainfoin, which they call "sulla" in Italian. It makes the very best hay and the very best honey is harvested from its bloom wherever it grows. Why can we not grow it in America? I have seen it nowhere in this country. Its botanical name, "hedysarum," is derived from two Greek words, "èdus" sweet and "aroma" smell. It is indeed a sweet-smelling blossom. I notice in the latest Gray's Manual that there is a plant of this genus in North America, "hedysarum boreale, Nutt," growing on the shores of Lake Superior, in South Dakota, and the Rocky Mountains south to Colorado. Is any one of our readers acquainted with it and does it yield honey? Sainfoin is more commonly known under the botanical, name of "onobrychis sativa," but in Bonnier's "Flore" index it is listed as hedysarum onobrychis. The Italians list it as hedysarum coronarium. I see that it has lately been introduced into

PROF. CARLO CARLINI

Australia under the name of "soola clover."

The May disease, our "paralysis" is well known in Italy. They ascribe it to cool, moist weather in spring, and inferior honey or bad pollen. This bad pollen theory was suggested in a number of places. The *Nosema apis* appears seemingly as an accompanying feature, not necessarily a cause. The disease evidently becomes endemic at times, as in the Isle-of-Wight case which is but a variety of the same complaint.

In our trip through the country we noticed a peculiar feature of each town, houses built with fine front columns and portals, so that one may go from one end of a street to the other under porticoes which form a roof over the sidewalk. In a small village we saw a dilapidated palace which served a a blacksmith shop. It had stone columns two feet in diameter, and a Latin inscription five or six hundred years old over the frontispiece.

Some cuts of our visit to the Piana apiary were published in Gleanings in Bee Culture for April 15, 1914. Through some mistake Mr. Herrod, of England, was reported to have been present. He was not with us.

The next day we were at Forli. Like many other cities of Italy it dates back beyond the Christian Era. These old cities have a style all their own and are very interesting. Here we were the guests of Prof. Ettore Bovelacci, already mentioned. He has volunteered to teach beekeeping to high school children and soldiers, without charge. Many young ladies follow his teachings, and he has already some 200 pupils keeping bees in the modern way, with movable frame hives. His office, right by his apiary, is very pretty and ornamental, see photograph. This is located at his farm, a mile or so from the city.

We found the bees everywhere exceedingly gentle. This was a rainy day, but the bees allowed me to handle them without smoke and without trouble.

In the city we visited a tinner, Mr. Montevecchi, manufacturer of reversible extractors, under a patent of his own. The most interesting feature of his machines is a friction gear instead of cogs, similar to that lately brought forth by the Roots, made of some sort of hardened cardboard. It is absolutely noiseless. The cost of extractors of this kind, in Italy, is between $20 and $30. They please me very much, and I doubt that any of our manufacturers make as desirable goods.

When evening came we bade farewell to our good friend, Count Visconti, who had accompanied us thus far, and who was returning to Milan while we continued towards Ancona, with Prof. Cotini. Dr. Triaca had been compelled to leave us a little earlier. We were sorry to part from them, but they had already given us more of their time than was reasonable for us to expect, since they had accompanied us some 175 miles.

As we passed through S. Arcangelo and Rimini we were met at the stations by several beekeepers who had attended the Faenza meeting and had come to bid us Godspeed. Among them was Signor Carlo Carlini, author of several booklets upon bees and beekeeping. This apiarist, owner of several hundred colonies with his associate Pedrosi, has given a thorough test to the American system side by side with the Sartori or German hives. The result of these tests is that he calls the Dadant hive "la valorosa, la preferita, la classica, l'internazionale, la regina delle arnie" (the valuable, the preferred, the classic, the international, the queen of bee hives). I hope the reader will forgive me for reproducing such eulogy. I promise not to do it again.

What a pleasure it is to find so hearty a welcome! Those Italians are hospitable; they are also fine looking men, with dark hair and black eyes. Many women are beautiful, even among the "contadini" or peasant class, and we are not astonished that the old Italian masters were able to give the world fine paintings and statues. They had fine models, if we judge the past by the present.

As we reached the shores of the Adriatic, a thunder storm arose from the east. It was almost sunset and the colors made by the white foam that lashed the shore, the greenish angry sea and the blue-black clouds above, with the setting sun shining full upon them, made a picture to be remembered. Beyond that flashing lightning, across the stormy Adriatic, were the then fighting Balkans. It seemed as if the raging elements were trying to give us a clue to the human strife beyond.

At 8 o'clock, we reached Ancona, one of the oldest cities on the Italian peninsula, the birthplace of my father-in-law, and the home of a number of intelligent and thrifty beekeepers. This was the farthest point reached in our travel. We will speak of it in our next letter and then slowly retrace our steps towards home.

THE APIARY OF AN ITALIAN PEASANT—(By Prof. Carlini)

Montevecchi, Prof. Cotini, Prof. Piana. —At Forli Sept. 10, 1913
Mrs. Dadant, Prof. Bovelacci, Count Visconti, Dadant

CONVENTION PROCEEDINGS

The Washington State Convention

The president and vice-president being absent, the meeting was called to order, and A. E. Burdick was chosen chairman.

Mayor J. F. Barton, of North Yakima, gave the address of welcome. He laid stress on the fact that in the fruit sections of the State bees were a necessity for fertilizing fruit bloom to insure a crop.

Dr. A. H. Henry does not believe that bees carry blight disease unless some other insect puts the germ of blight where the bee goes to get nectar or pollen. If the orchardist will cut out all diseased limbs or parts of trees as soon as blight is visible, there will be no danger from any work the bees may do.

Dr. Henry, at the close of his remarks, suggested that this convention should make some recommendation to the different fruit associations that some preparation be mixed with the arsenite of lead mixture to make it bitter enough so the bees would not work on it, so as to save many bees from being poisoned in the spring.

The convention took the suggestion under consideration.

Mr. Burdick spoke on selling honey, and told of the different methods of selling honey, many of them questionable to say the least; chief of these was by trying to deceive the people by misbranding as to locality from where the honey came, and the source of nectar.

Two papers were read from Prof. Francis Jager, of the Minnesota Experiment Station, one on the Carniolan bee and the other telling what the State of Minnesota is doing for her beekeepers.

The serious problem of having bees and honey stolen from out-apiaries was brought up. The secretary thought the best plan was to form a beekeepers' protective association and assess all members joining, so much per colony as a fund to offer a reward and prosecute the thieves if caught. Some of our members have lost very heavily in bees and others in honey. Nothing definite was done.

Hans Christensen told his method of producing comb honey, and Robert Cissna and C. W. Higgins, who own automobiles for their work, are well satisfied with them as time savers. C. W. Higgins thinks a truck would not be as profitable on account of the extra cost in repairs. One of the best inducements to own an automobile for the beekeeper is in handling bees. There is no danger from bee stings, as is the case with a horse.

A paper from Dr. E. F. Phillips, of Washington, D. C., on his experiments in wintering bees was read.

Papers were read from Editor Dadant on "Feeding Bees" and from Hon. George W. York on "Honey Exhibits at State Fairs."

The committee on foulbrood law was ready to report, and as we had a delegate in attendance from the Pierce County Beekeepers' Association, we joined hands in framing a law that we believe will be of benefit to the beekeepers at large in the State.

It was moved and carried that the thanks of the convention be extended to Mayor J. F. Barton, Dr. A. H. Henry and to all others who in anyway contributed to the success of our convention.

Election of officers resulted as follows: President, J. B. Ramage, North Yakima; vice-president, C. W. Higgins, Wapato; treasurer, Gus Sipp, East Selah; secretary, S. King Clover, Mabton.

We did not have as many in attendance as at some former meetings, but the enthusiasm and work accomplished was as great as at any of our meetings.

On motion the convention adjourned.

J. B. Ramage, *Sec.*

SCHOOL APIARY OF PROF. BOVELACCI AT FORLI

CONTRIBUTED ARTICLES

Basswood Planting

BY PROF. G. B. MACDONALD.

BEEKEEPERS well know the value of basswood trees for the production of honey. It should be possible for farmers interested in bee culture to make the basswood trees serve a double purpose. Trees of this species might be utilized for windbreak purposes as well as for the production of honey.

Under good conditions the basswood sometimes attains a height of 70 to 80 feet. The crown of the tree is quite compact, and forms a very dense shade. It is best suited to deep, rich, river-bottom soil and to cool situations. Very often the basswood will be found on the cooler slopes along with a variety of other trees. It is quite hardy, and although it will survive, in many instances, on up-land soil, yet as a general rule it is not advisable to plant this species in dry situations.

The basswood can readily be reproduced by seed and by sprouts. The seeds ripen in September or early October. As soon as the seeds are collected they should be freed of the wings and planted at once. The freezing and thawing during the winter aids in rotting and loosening the seed coat and thereby make possible an early germination. Although fall planting is generally recommended, it is possible to keep the seed over winter in a cool, dry place by storing in sand.

The young basswood trees should be grown in nursery rows and transplanted to their permanent location at the age of one year. The trees should be set out as soon as the frost is out of the ground in the spring, and should be given protection from cattle and fire. Cattle, especially, do considerable damage to young trees by eating the small branches and foliage.

Ames, Iowa.

[The above, in answer to a question asked at the Ames meeting, was written by Prof. MacDonald, the Forester of the College, and forwarded to us by Prof. Pammel. In addition to these suggestions we will say that where basswood timber has been grubbed out, very often sprouts spring from the remaining roots and produce quick growth. These may be transplanted after they have formed a crown of rootlets. Basswood trees make fine ornamental shade.—EDITOR.]

APIARY OF CARLO CARLINI

TALL ITALIAN MOVABLE FRAME HIVES—APIARY OF CARLO CARLINI, OF SANTARCANGELO

Large vs. Small Hives

BY J. E. CRANE.

IN the September number of the American Bee Journal for 1914, on page 309, is a very able and excellent article by D. Barone, on the value of large brood-chambers, which proves very conclusively the value of large hives. Indeed, I believe he has by no means said all that he might truthfully have said; for he might have added that a large hive required less looking after, was much less liable to get short of stores and less liable to swarm; the three or four extra combs seeming to regulate the colony something as a governor regulates the motion of a machine, making it run more evenly.

And yet there is something to be said on the other side. Having used both large and small brood-chambers during the past 50 years on a somewhat extensive scale, I believe I am in a position to judge without prejudice as to the merits of the different sizes of hives.

Where the season for honey gathering is of fair length and a later flow of buckwheat, goldenrod, asters, or other late flowers so that the rearing of brood will be continued until late in the season, there is little doubt that the larger size of brood-chamber will prove a great success. Many years ago I made hundreds of brood-chambers to hold 11 Langstroth frames, with clamps to hold 40 one-pound sections. There was at this time a very fair yield of basswood honey which added to our clover, and gave us a fair season. I then thought, especially after a flush season, that an 11-frame hive was just the thing. But seasons change. Our basswood has for many years given us but little nectar. Instead of our 11 combs being filled with brood and honey the latter part of summer, I found often little of either, but instead many of the combs were almost solid with bee-bread, while 8 frames would have held, if well filled, all or nearly all the honey and brood the hive contained. How much better, I thought, to have all in a compact form in 8 frames than scattered through 11.

It is true, as Mr. Barone says, that a good colony well wintered will build up very fast in spring; but I am sorry to say that a large brood-chamber will not of necessity have a large colony in the fall. I have found at least one spring, one yard, where almost without exception every colony that failed to survive the winter was on 11 combs, where nearly all on 8 combs came through safely. It requires more than a large brood-chamber in the fall to make an equally large colony, although it often helps. I found another thing, that I could handle or manipulate an 8-frame hive much faster than an 11-frame hive, as when looking up queens or cutting out queen-cells or making new colonies. An 8-frame hive is also much easier to handle, a matter of some importance as one grows older.

Perhaps nothing influenced me so much in reducing my brood-chambers in size as the fact, as it seemed to me, that I could get bees into sections and storing in them much quicker than with brood-chambers of larger size. Our seasons for surplus honey have become very short, clover being our main, and I might almost say, our only dependence.

For some reason even a strong colony does not seem to enter a super over a large brood-chamber as soon as a smaller one does over a smaller hive. I have little difficulty, in normal years, in getting a large proportion of my colonies up in strength when clover yields to enter the supers, and so able to get a larger number of finished sections in a brief period than where the bees enter the supers later.

It is true, as Mr. Barone says, we may induce bees in a large brood-chamber to enter the supers by taking away a part of the combs or reducing the size when we wish the bees to enter the supers; but this would seem to be more expensive in labor than the use of a smaller hive.

Again for new swarms, an 8-frame hive is large enough if we would secure a large harvest of section honey. Indeed, if we would secure the largest amount in a short time it may be better to reduce the chamber to 6 or even 5 frames, thus forcing them to do most of their work in the supers The earlier we can get bees into supers, on either old colonies or new, the sooner we are likely to get them filled, and the less partly filled sections to remove and extract and carry over until the following year.

There are other conditions where a small brood-chamber is much to be preferred to a large one for securing section honey. In the South there is considerable territory where bees gather a sort of nectar from the base of the leaves where it is excreted by little glands in the cotton and partridge pea plants. While working on these plants there is apt to be a shortage of pollen in the hives, and brood-rearing proceeds very slowly, as brood cannot be reared without a good supply of pollen. As a result of slow brood-rearing the colonies are small, and increasing the size of the brood-chamber will not increase the size of the colony, because the trouble comes from lack of pollen. If section honey is to be obtained the hive must of necessity be brought down to fit the size of the colonies, which is found to be not more than 8 frames, and a smaller size is often preferable. With a large brood-chamber under such conditions, section honey is pretty much out of the question, while with a small one very satisfactory results are secured.

Mr. Barone says in the article above referred to, that "The importance of principles, of judgments, as well as of inventions of great scientists, men of letters and artists is always relative to the circumstances of time and place." Just so, and so we may conclude that while a large brood-nest is desirable under many, perhaps we may safely say a majority of cases, yet there are many conditions and circumstances where one may succeed better with a smaller one. After using a smaller brood-chamber for a number of years for section honey, I thought I would try one or two yards for extracting. For this purpose I found myself going back, almost instinctively, to a larger hive as far better for securing the largest amount of extracted honey.

The object of this paper is not for the purpose of booming a large or a small brood-chamber, but to suggest to beekeepers that they think for themselves and study the conditions and circumstances with which they are surrounded, and adopt such hives and appliances as are best adapted to secure the largest measure of success in their environment.

Middlebury, Vt.

Sitaris

BY A. F. BONNEY.

COMPLYING with your general request in the December issue of the American Bee Journal, I hand you what the Century Dictionary says about the Sitaris, as follows:

"Sitaris (sit'aris), n. A genus of blister beetles of the family *Cantharidæ*, having filiform antennæ and subulate elytra. They are found only in southern Europe and northern Africa, and only about a dozen species are known. In early stages they are parasitic in the nests of wild bees, as *S. colletes* of southern France, and in those of bees of the genus *Colletes*, where they undergo hypermetamorphosis."

The female imago of the Sitaris is about half an inch long, and the article I am quoting shows seven illustrations of the varions changes the insect undergoes.

The mention of the "wild bees...... of southern France" would seem to clear up the matter alluded to, and I was about to let it go at that, but a further search revealed the fact that the wild bees alluded to under the genus *Colletes* "usually burrow in the ground to the depth of several inches. These solitary bees all belong to the family *Andrenidæ*, "A family of aculeate melliferous hymenopterous insects; the solitary bees......All the species are solitary, and most of them burrow in the ground, though some live in the interstices of walls. *The cells are provisioned with pollen or honey, in the midst of which the female deposits her eggs.*" This is, I believe, the classification of Latreille, a noted French zoologist of the last century.

The italics above are mine.

Mr. Ward was evidently somewhat careless in his handling of this subject, or quoted without sufficient research, for the first larva of the Sitaris is fully one-eighth of an inch long, and in the second development, caraboid, almost half an inch in length, and this would, it seems, have some difficulty in doing as he describes: "Rests on the shell (of the bee's egg, I opine) and undergoes its first metamorphosis. Now it eats the honey prepared for the grub of the bee and develops into the perfect beetle." Mr. Ward ignores the six stages of development described by Latreille, mentioned above.

Buck Grove, Iowa.

California Notes

BY W. A. PRYAL.

THIS year of grace has opened in a way that gladdens the bee-ranchers' heart, for throughout the greater part of the State the rainfall has been sufficient to warrant, with the showers that are sure to follow in regular sequence, a splendid growth of vegetation. The honey-secreting flowers will be plentiful; the apiarist must see that his colonies breed up so that there will be a big force of workers to gather the nectar, should it come at the right time. And there's the rub! The grass may grow, the shrubs and vines luxuriate in plentiful garbs of newness, and be jeweled and spangled gorgeously in brilliant array, and yet these beautiful flowers fail to produce any nectar. All, usually, on account of some queer freak of the weather.

This was the case with the writer last season. We had splendid rains at opportune times, and yet the honey crop fell far below the average for wet years. Here with me, it was because the nights through April and May and a portion of June were too cold.

Toward the end of last summer I, in company with my little family, made an automobile trip into the wild mountains of Monterey county, where dwelleth Seneca A. Niver, well known in years gone by as the genial honey man of Wisconsin. The versatile Niver managed my apiary here the year he came to California, some four years since. The location of his apiary seems ideal, judging by the vast honey-flora that abounds thereabouts. And the past year the plants grew luxuriantly and bloomed profusely, and still they did not yield any nectar. So scant was the amount of honey stored by the bees that artificial feeding had to be resorted to in order to prevent them from starving. I was told that the altitude was too much; that above 1800 feet nectar secreting begins to wane. I believe the Niver-Colburn apiary was some 2000 feet above sea level. And it was for this reason that the apiary was moved the past fall to a lower level.

The winter so far has been rather an open one; yet I never knew a winter when there was such a dearth of flowers that the bees cared to visit. They do not bring in any stores at all, though it is common here for them to do considerable foraging during the winter time. It is through lack of getting such winter pasturage that more colonies than usual will be starved out, unless the apiarist feeds them.

By the death of John Muir, the noted California scientist and writer, the beekeepers of the State have lost a good friend. I remember with pleasure his two articles in the "Century Magazine" some 30 odd years ago on "The Bee Gardens of California." It was one of those prose nature poems with which the delightful scientist charmed his readers, and which few other writers could excel.

What I should like to see is the National Beekeepers' Association hold a convention in Oakland this year. Some 30 big conventions from all over the United States are to meet here. The new Municipal Convention building, costing over a million dollars is about finished, and it is offered free—the finest meeting place west of St. Louis, And it's *fair* time and so near San Francisco, too; only 10 cents ferry service to the grounds with direct service over a picturesque marine route. Then there are a large number of interesting places and objects to visit, making the sojourn in Oakland well worth while.

While touring northward early last summer I spent several days in Sacramento city. While there I called at the office of Prof. A. J. Cook, our State Commissioner. I was sorry to find that the Professor had gone to the southern portion of the State on business connected with his office. so my call was in vain. Since Gov. Johnson has been re-elected, it is fair to presume that he will continue Prof. Cook in office. Our Horticultural Commissioner is giving satisfaction, though for a time his enemies tried to make it unpleasant for him. When the Governor found that the complaints against Prof. Cook were groundless, he turned them down, and commended the commissioner for his energetic management of the office.

Oakland, Calif.

Minnesota's Surprise

BY FRANK C. PELLETT.

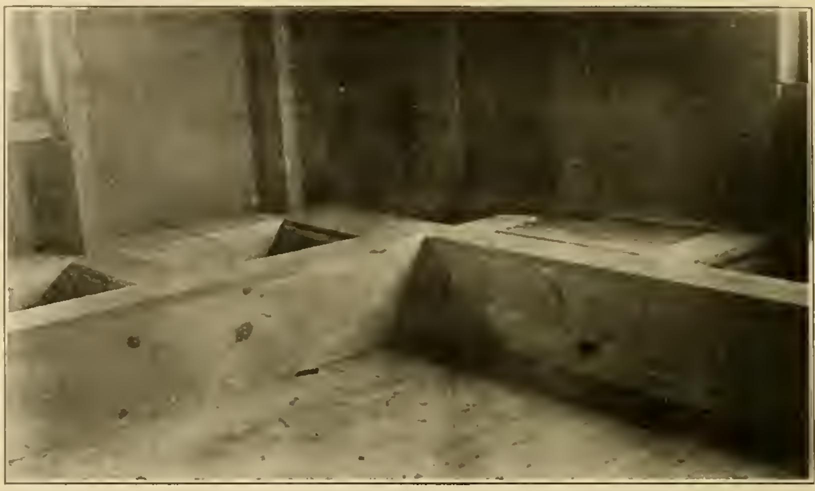
MINNESOTA is not in the habit of doing things by halves. She boasts of her leadership, and, as a rule, she has good reason to do so. Two years ago when the committee representing the beekeepers' association asked the university officials that beekeeping be given some recognition in the university, they were informed that there was no demand. The president of the association, Mr. P. J. Doll, and the secretary, Dr. L. D. Leonard, together with some others of the more active members went directly to the legislature, asking for the same recognition given to the poultry, dairy and other farm industries. The legislature was convinced and the department established. However, the readers of this paper already know about the department of beekeeping in Minnesota.

The thing I started to tell about is the short course held at that institution in January. It was my good fortune to be present for two days, and to say that I was surprised at the interest is putting it mildly. In all departments there were about 400 students in attendance at the short course. Of these 78 registered for the course in beekeeping, and at some of the classes nearly 100 were in attendance. It was talked of everywhere as a matter of great surprise that the class in beekeeping should be larger than any other in the whole bunch.

While dairying, poultry keeping and other lines have been established for many years and are generally recognized as important industries in the State, the beekeeping department was not yet established two years ago. Prof. Jager was kept very busy with his classes, some days putting in eight hours of continuous lecturing, with a short interim for dinner at noon. The fun of it is that the local demand for honey seems to be greatly increased because of the publicity the increasing interest gives, and the local association finds it necessary to buy quantities of western honey to supplement its own crop.

Atlantic, Iowa.

ART OF THOSE IN ATTENDANCE AT THE SHORT COURSE IN BEEKEEPING AT THE UNIVERSITY OF MINNESOTA



INSIDE CORNER OF STRITTMATTER'S HOUSE APIARY SHOWING HIVE ARRANGEMENT

House Apiaries

BY F. J. STRITTMATTER.

A NUMBER of enquiries having been sent concerning the Strittmatter house apiaries, described with cuts in the November number, Mr. Strittmatter replies as follows:

We have had a number of enquiries as to the details of construction of our house apiaries, and find it impossible to give full answers for lack of time, as we are very busy with our honey marketing in winter and with the bees in summer. However, this will cover about all the questions sent in to date.

In regard to swarming, we run our bees at our out-apiaries for extracted honey, and have no swarming unless we neglect to give plenty of room. At the home apiary we run a part of the colonies for comb honey, and have an occasional swarm, but so far have not had as many swarms in the house apiary as we had outside. We hive the swarms either by the returning plan, by exchanging the frames while the swarm is out, or hive it in a single-walled hive, and as soon as the bees are in the hive place it over the hive in the building where we wish to have it stay, and later exchange the frames, putting the swarm down, or it may go down itself. We have not had over 10 percent of the comb-honey colonies swarm from the house apiary. We certainly like the house apiaries better every year, either for comb or extracted honey.

We have not had much trouble with young queens entering wrong hives, but we usually try to have queens mated in corner hives. The most we have in one row is 15 hives, on the long side of our home apiary, and with four colors of paint the bees have no more trouble getting to the right place than by the usual method outside. We leave the packing around the hives all the time. In fact, it is built solid. We use sealed covers in winter with about 5 inches of sawdust on top, and in spring we use home-made quilts made of cotton or rags about three-fourths inch thick. These we keep on the sawdust in winter, too, as we have no other use for them then. We use an entrance about 16 inches long by a scant three-eighths high, and a heavy strand of wire tacked on the upper side to be sure it is mouse proof. An opening about 4 inches high, from the hive proper, out through the wall of the building, is left open in summer, and in winter we have a sort of storm board we drop down in front, with an entrance about 3 inches long by three-eighths inch high left in bottom.

We use hemlock boards to make the hives in the building, having them surfaced off. The offset where we nail on the tin rabbets for frames to hang on is provided by having the side-boards and end boards of hives seven-eighths inch lower than the hive is to be. The board lying flat over the sawdust is about one inch narrower than the space between the ends of hives and the thickness of end boards, and is nailed on so as to allow the proper space for the tin rabbets. I enclose a photograph showing inside corner view of the building, and the hive arrangement we like best. Cuts in November, 1914, American Bee Journal, show outside arrangements, page 383.

Ebensburg, Pa.

No. 3.—The Honey-Producing Plants—"Asters"

BY FRANK C. PELLETT.

(Photographs by the author.)

THERE are said to be about 125 species of asters or starworts in North America, and also many species in Europe, Asia and South Africa. These plants then must be familiar to the beekeepers of temperate regions in all parts of the world. Some species grow in open shady woodlands while others delight in the open sunlight of the prairie. They range in height from 18 inches, or less, to 8 feet. As a rule, the plants are many flowered, as will be seen by the picture. A plant with a small number of flowers was chosen in an attempt to secure greater detail. Sometimes hundreds of blossoms occur on one stem. They range in color from white to blue and dark purple, blue being perhaps the most common color. They have a tendency in some cases to become weeds, but are easily destroyed by cultivation and are not often regarded as serious. The bloom in this locality comes very late, lasting until killing frosts. In 1914 the writer saw bees still working on asters in November.

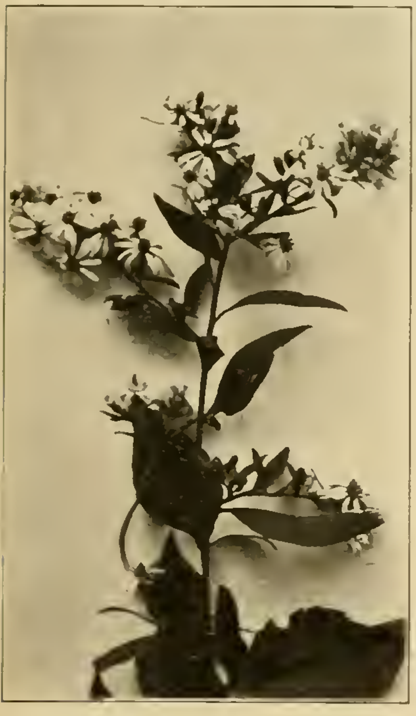


FIG. 13.—WILD ASTER

These plants are very attractive to a large variety of insect life, many different species seeking them in addition to the bees. The white rayed flowers are said to be the best honey producers, some species apparently not yielding any nectar. The value of the asters as honey plants is rather uncertain, for while they yield considerable surplus in many localities, the honey makes very poor winter stores and many reports show heavy losses from wintering on aster honey. The honey

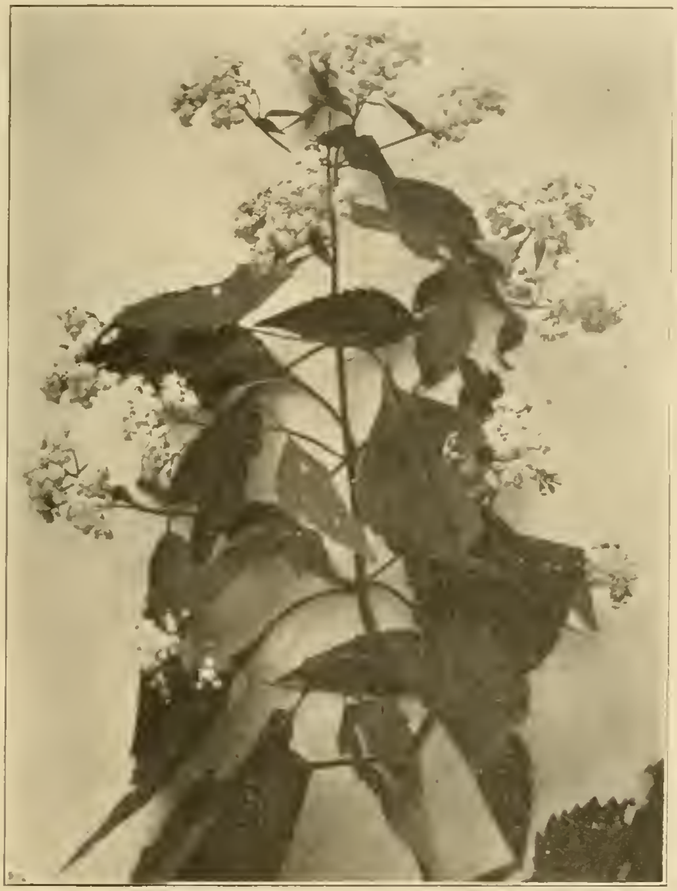


FIG. 14—BONESET OR WHITE SNAKEROOT

FIG. 15—WHITE SNAKEROOT IN AUTHOR'S WILD GARDEN

is said to be white with a mild flavor. In most localities it is mixed with goldenrod and other dark honeys, so that it is not often seen separately. It is said to be rather thin, and by itself not to thicken up readily.

BONESET OR WHITE SNAKEROOT.

There are several closely related species of this plant (*Eupatorium*) known by the names of boneset, thoroughwort and white snakeroot. The common species ranges from New Brunswick to Dakota and south to the Gulf of Mexico. Boneset is frequently spoken of as a honey plant. It blooms in late summer, sometimes persisting until frost. This plant is a perennial, and if left undisturbed remains for many years in open woodlands that are not too closely pastured.

The species common in western Iowa is known as white snakeroot (*E. urticaefolium*), which is supposed to be poisonous and to cause the disease known as trembles in animals. Although much of this plant grows in the writer's wild garden and the cow sometimes eats it, no bad effect has ever been noticed. Probably the quantity taken has not been sufficient. Milk sickness is said to be caused by the use of milk, butter or cheese, or even meat from animals afflicted with trembles. If the trembles be caused from eating white snakeroot it is then, indirectly, the cause of milk sickness.

In his book on poisonous plants, Dr. L. H. Pammel cites a number of cases where the disease, "trembles," has been produced in animals by feeding them with the extract of this plant. Dr. Pammel also cites the results of investigations that seem to contradict this conclusions, so as to whether this plant actually sustains any relationship to these diseases would seem to be questionable.

The boneset of commerce is made from *E. perfoliatum*, which also is most often spoken of as a source of honey. The drug is well known and widely used as a remedy. These plants are quite an important source of fall honey.

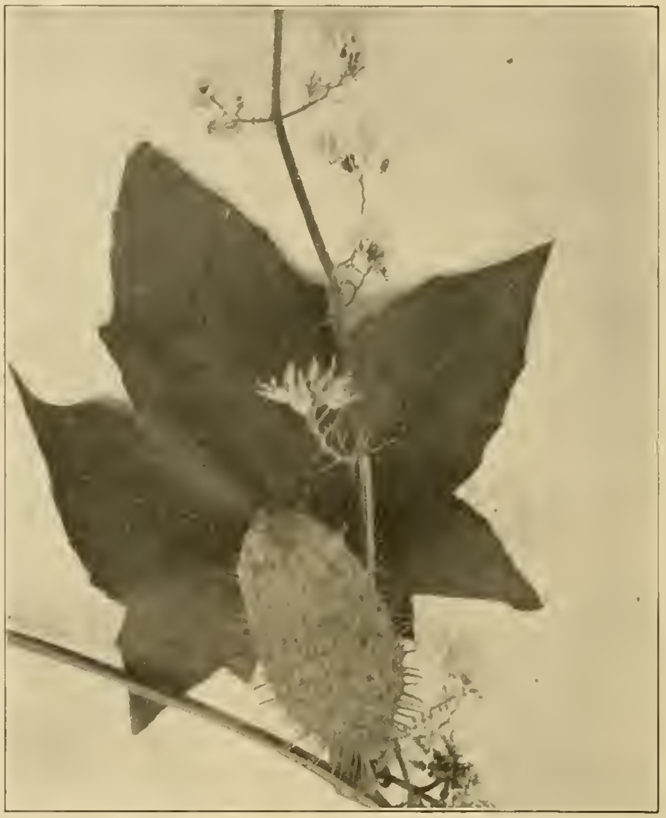


FIG 16.—FLOWER, FRUIT, AND LEAF OF WILD CUCUMBER

WILD CUCUMBER.

The wild cucumber, or wild balsam apple (*Echinocystis lobata*) is a climbing vine common along streams from New England to Texas. It is also commonly cultivated as the shade for arbors, porches, etc. The plant is an annual and comes from the seed each year. There are few localities where it is sufficiently abundant to be of value to the beekeeper, and it is seldom mentioned among honey plants. However, in a few localities along the Mississippi river it is reported as quite an important source of nectar in midsummer. On river bottoms it occasionally grows in great abundance. The writer has no personal knowledge of its value.

Atlantic, Iowa.

Copyright, 1915, by Frank C. Pellett.

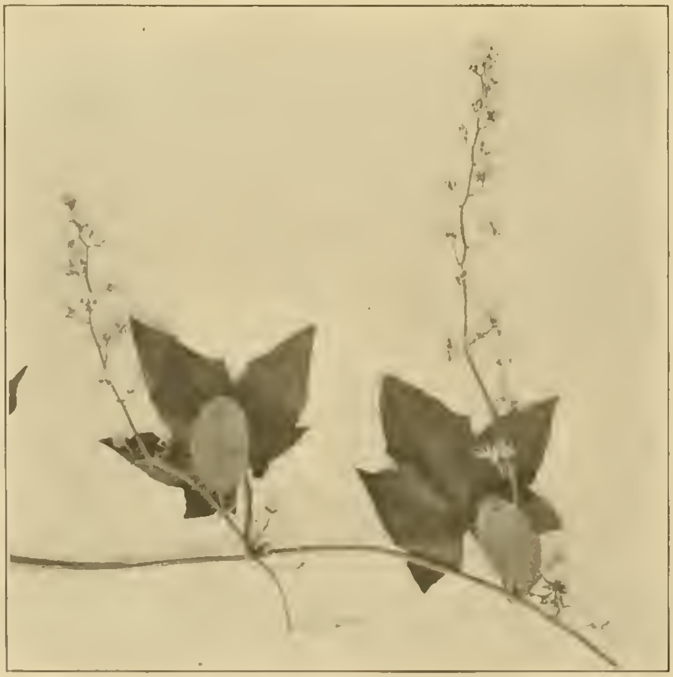


FIG. 17.—WILD CUCUMBER

European Foulbrood

BY P. H. ELWOOD.

We have had quite an experience with European foulbrood. It might interest you to know how bad it is sometimes. When it commenced, in 1897, we had between 1300 and 1400 colonies. In 1903, we had less than 300 colonies left, and that after buying more than that number (300) of healthy swarms from localities where it did not exist. In 1906 it practically disappeared. If I had not bought any, quite likely it would have disappeared sooner. The new bees added fuel to the fire, for they took the disease and the contagion became stronger, and some of the old ones would again take the disease or become worse if they had not overcome it.

About the middle of the summer of 1897, I visited an outyard and found about one-third afflicted with a new disease that was unlike the old American foulbrood with which I was familiar. As it was a disease of the brood I killed all the queens and later replaced them after the brood was all hatched out.

It disappeared in the fall, and the next spring we had very little of it. The following year was very poor for honey, and it again appeared with irresistible force. In mild cases it usually disappears in the fall, but unless someing is done to check it, the disease usually reappears in the second brood next spring. We did everything for it. We shook them on clean empty frames. We reshook them after a few days. We dosed them with lysol and carbolic acid. We fumigated the combs with formalin, but it reappeared. The contagion seemed to be everywhere, in neighbors' bees and bee trees. In fact, there is no doubt that the mature bees and the queen become diseased and carry the disease. We finally went back to the method I practiced the first day, killed the queens and allowed them to clean house. After the brood has all hatched, or after three weeks, give them a good queen. This gives time for the removal of diseased larvæ and contagion. In mild cases it will usually disappear. We preferred Carniolan queens; first, because they are more prolific; second, because we thought them more resistent.

When the swarms are weak and the disease bad, as when the larvæ settle down to the lower side of the cell like a drop of pus, the colony may as well be killed.

Whoever has not had "larvæ settle down to the lower side of the cell like a drop of pus," has not had European foulbrood in its worst form. Specimens of such brood taken from our apiary have been found to be infected with *bacillus alvei*, the cause of European foulbrood. I use this comparison because the larvæ drop down without form and of the color of pus. There may be different types of European foulbrood, but I have supposed there was only one, differing in degree or virulence. Dzierzon speaks of two kinds. He advised, as early as 1857, the "well-timed removal of the queen from incipiently infected colonies" as a cure.

Forty-two years ago, in transferring some bees into Quinby frames, Capt. Hetherington discovered that I had bought some (American) foulbrood. Capt. Hetherington had had much experience with it. Later when it was proposed by influential bee-men to call this "New York State disease," the old fashioned foulbrood with variations, I vigorously opposed it, feeling that my experience with both diseases justified me in doing so. We, therefore, kept up the agitation until the question was decided right.

With some diseases in the human family, those who survive become immune or partially so, and I believe this is somewhat the case with this disease among bees. A noted beekeeper from England once told Capt. Hetherington that the bees in a large section in his country were practically immune to European foulbrood.

If you want to know anything more about our experience I will answer promptly, but don't ask me for an infallible cure, for I know of none.

Fort Plain, N. Y.

Beekeeping in the Boise Valley, Idaho

BY GEORGE W. YORK.

BEEKEEPING is one of the growing minor industries along the agricultural line in the State of Idaho. In what is known as the Boise Valley, which is one of the larger irrigated districts of the State, there are many successful producers of honey. Among the more extensive beekeepers is E. F. Atwater, of Meridian, who has a total of 1100 colonies scattered around in 13 different out-apiaries. The major portion of his crop is extracted honey, which he disposes of in both glass and tin packages.

The season of 1914 was one of the poorest experienced in his locality in recent years. His average per colony was only 50 pounds. One year his average was 150 pounds, and that season he had a total of around 80,000 pounds.

The principal sources of honey here are alfalfa and sweet clover, the latter growing in abundance mainly along the irrigation ditches that extend in many directions all over this beautiful valley.

Mr. Atwater finds almost unlimited demand for his product, the main difficulty being to produce enough to supply the market. He not only furnishes the grocers of Boise—a city of some 30,000 people—but ships in all directions.

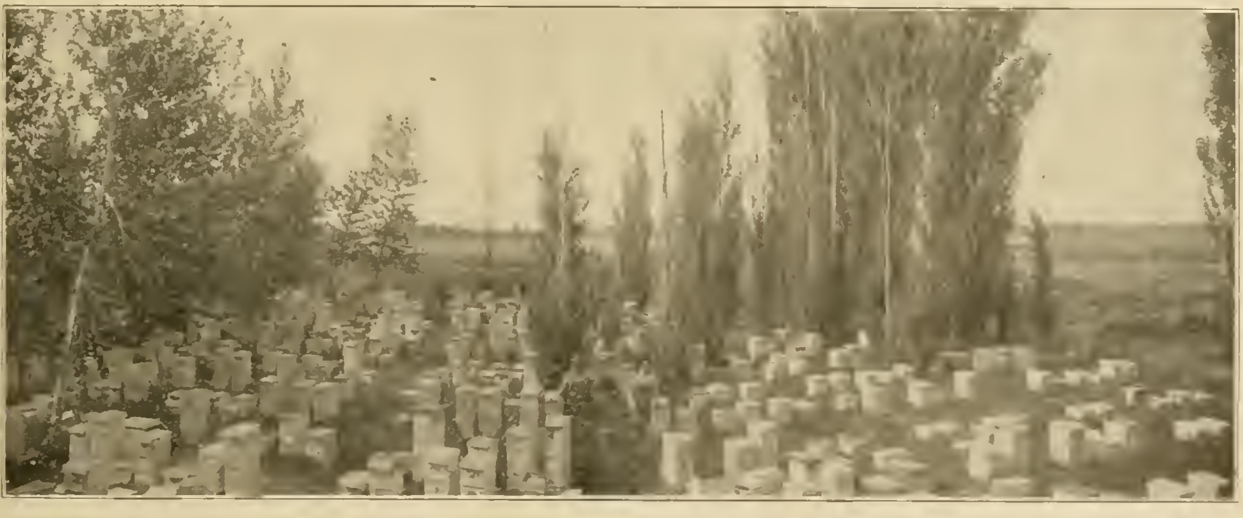
The picture shown herewith represents an experiment that Mr. Atwater made in 1911 and 1912, to see if a location could be overstocked. There were 540 colonies in this one apiary, and the average secured per colony was only about 35 pounds. He concluded that there were too many colonies in the apiary, in view of the extent of the honey-producing blossoms in the immediate vicinity, although in a really good season he doubts that this locality can be easily overstocked.

Mr. Atwater's apiaries are being located farther and farther away from his home, as it seems that for some reason he is not getting the results he formerly secured in the old locations. He is discovering some new places which he believes in the near future will produce excellent crops of honey.

It is Mr. Atwater's intention to run his apiaries almost wholly for extracted honey hereafter, as it is impossible to get the best grade of comb honey in this locality.

He uses the ordinary size frame (Langstroth) for brood and for the extracting stories. But his bottom-bars are ¼ inch shorter than the ordinary bottom-bar, which draws the lower ends of the end-bars ¼ inch nearer together when nailed. This is a kink that helps to remove the frame more easily from the hive than if the bottom-bar were of the usual length.

Mr. Atwater also prefers a single groove in the underside of the top-bar, and fastens the foundation with melted beeswax rather than with the use of a wedge. He says he can put the foun-



E. F. ATWATER, OF IDAHO, KEPT 540 COLONIES IN ONE YARD TO FIND IF THIS LOCALITY COULD BE EASILY OVERSTOCKED dation in more rapidly, and thinks it is better in every way. It also makes the frames less expensive than if double grooved and wedged.

The ordinary friction-top honey pail has not been altogether satisfactory to Mr. Atwater. He prefers the common lard pail with a double cover, the extra cover preventing the entrance of dust or other foreign matter. The extra expense is perhaps only half a cent per pail.

Mr. Atwater, with other beekeepers here, is much interested in strengthening the bee disease laws of Idaho at the present session of the legislature. But I will later write an article on this subject and the extent of the beekeeping industry in this State, getting some of the information from the Horticultural Inspector, under whose department comes the enforcement of the bee laws of the State of Idaho.

Sandpoint, Idaho.

Some of the beeswax rendered at the Massachusetts Agricultural College Rendering Station—Mr. Jno. L. Byard operator. The piles represent about 800 pounds of commercial wax.—(Author's illustration)

Another Method of Introduction

BY SOUTHWESTERN BEE CO.

FROM a casual reading of the December American Bee Journal it appears that queen introduction is being given a great share of attention just now. The article from our Swiss brother was of particular interest, especially because he went into detail as to most of the more commonly used methods and gave comparative records. Our apiary manager has asked us to describe what he calls the *water method*, one which he assures me has never in his experience met with failure. He says that he wishes he might have had an opportunity of trying it on the obstinate No. 23 that Dr. Bruennich described.

The procedure is as follows: Kill the old queen; remove all frames from the hive and shake into the bottom of the box with a sharp jar, all the bees possible. Sprinkle the mass of bees on the hive floor with water until they *are soaking wet*. The secret of success is in the use of plenty of water; there is no danger of overdoing this part. Wet the new queen thoroughly and put her on the pile of wet bees. Put back the combs into the hive and the job is finished. We have been using this method for several seasons. We have never lost a queen, even in the most obstinate cases, and have found the method successful with virgins, with laying queens, and with queens received in cages by mail.

When honey is coming in, any time of the day will do for the work of introducing, but in times of dearth it is better to wait until about an hour before dark.

The chief value of this method is that there is no time whatever lost and the new queen is immediately accepted and ready to go to work. It has none of the disadvantages of Arthur C. Miller's smoke method. (Incidentally would say we have had only partial success with smoke.)

Some may say that when Dr. Bruennich plunged No. 23 into the lake, he had practically adopted the method above described, but the difference, and we believe the cause of his failure, lay in his use of the wire cage and the fact that he did not soak the new queen in water and release her with the bees.

San Antonio, Tex.

Why Not Save the Wax?—It Will Help Pay the Foundation Bill

BY DR. BURTON N. GATES,

(*Associate Professor of Beekeeping, Massachusetts Agricultural College.*)

IN States where apiary inspection is progressing, inspectors often find occasion to condemn considerable amount of comb. This may be broken or mutilated, and unsuitable for further use in the hives or it may be good comb, but infected and not desirable to use. This is especially true where American foulbrood prevails, for it is not considered safe ever to use American foulbrood comb.

Inspectors find, too, it is by preference often times, that beekeepers will destroy this comb and not attempt to salvage this wax. Rightfully there is a prejudice against home wax rendering. Unless one has exceptional facilities, wax rendering in the kitchen or home is highly objectionable to the entire household. Furthermore, it is time-consuming and generally conceded that home rendering does not give maximum returns.

In an effort to meet these objections, the Massachusetts Agricultural College and the Apiary Inspection Service have offered provisionally to open a Wax Rendering Station. This was announced previously in the American Bee Journal. The results have been astonishing and almost overwhelming. For instance, one shipment of scrap wax consisted of a thousand combs. There have been other large shipments as well as many small ones. Apparently the opportunity has met with immediate favor. As evidence of some of the product of this Rendering Station, the illustration herewith shows a part of the product of the last few weeks. At some future time figures will be given to show the amount of wax salvaged during a given period.

If the college had not offered its services, in some instances at least, the writer knows positively that the material rendered would have been burned up rather than to attempt its reduction at home. Furthermore, knowing that these services are available, the beekeepers are saving their scrap wax. To do this, a tight barrel should be procured, and as comb is thrown into it, a tamper, such as a piece of 2x4, should be used to pack the comb solidly into the bottom. The harder the comb is packed the better the results. Among a relatively few colonies of bees, the apiarist will be surprised, in the course of a year, at the amount of scrap wax which he will accumulate. Freight rates are low, consequently he may well afford to ship this to the Central Rendering Station for reduction. At his pleasure, the rendered product will be forwarded to the foundation manufacturer, supply agent, or elsewhere as he may direct.

It should not be forgotten that beeswax is as important a product of the apiary as the honey. The well cared for apiary, moreover, will not show old comb and wax scraps scattered about the premises. If not destroyed, they will be stored for rendering. Beekeepers should not lose sight of the possibilities of obtaining a neat margin of income from their old combs and scraps. As the policy of the Massachusetts Agricultural College becomes more definitely proven and more widely known, it is anticipated that additional wax rendering stations will be available about the country.

Amherst, Mass.

[The above advice is in the right direction. We know by the amount of combs shipped to our people that most beekeepers dislike the task of rendering them. Yet they are too valuable to be wasted.—Editor.]

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

Is Fall Shipping Injurious to Bees Wintering?

I am considering shipping bees in the fall, say 100 miles or more, and then giving them a good flight before putting them in the cellar. Do you think it injurious to their wintering well to ship them in the fall? Wisconsin.

Answer.—If they have a good flight before being taken in cellar, I should not expect any harm from the journey. The excitement of the journey, however, would make them eat a little more, so you would have to be a little more careful to see that they had stores enough.

Spring Protection After Wintering With Supers in Cellar

For the first season my bees are wintered with supers on. I had to leave them on so that my bees would not be short of stores. I would like to know if there would be a way in the spring to have my bees all in one single brood-chamber, so as to keep them warm for the first month after they are taken from the cellar? Quebec.

Answer.—If the upper story contains the same kind of frames as the lower, and you find the bees in the upper story, it will not be difficult to lift out all frames containing brood and put them in the lower story, brushing in front of the hive any bees that may be on the other frames.

If the upper frames are not the same as below, and you find the brood-nest above, and much brood there, then you had better leave them as they are until warmer weather. Indeed, in any case, seeing the bees are all wrapped, it may not be a bad plan to leave them just as they are until warmer weather comes.

Shipping Bees—Red Clover Workers

1. Please send me the price of honey-bees and queens, and price of comb honey.
2. When is the best time to ship bees in the spring?
3. What kind of a bee will work on red clover? West Virginia

Answers.—1. I do not rear queens for sale, although I sometimes sell a queen in July. I make my money selling honey, and to get the most honey I can afford to take a lot of pains to rear the best queens I know how, and can make more money selling the honey of such queens than I can selling the queens themselves or their bees. If there is any one thing a honey producer should strive for, it is to learn to improve his stock by rearing queens from his best stock.

2. In freezing weather the combs are somewhat brittle, and likely to break easily, and the bees do not stand a journey as well as when more active. When combs are filled with honey they are likely to break in transit, and if too warm there is more danger that the bees may suffocate. So the best time in spring is while the combs are mostly empty, any time after it is warm enough for the bees to fly nearly every day.

3. The common hive-bee generally gets nothing from red clover because the flower tube is too deep for the length of its tongue. There are times, however, either because the tube is not so deep as usual, or because it is fuller of nectar, when a honey-bee of any race will get nectar from red clover. It is also true that there is a difference in the length of bees' tongues, and there have been bees with tongues of such length that they could work on red clover when others could not. Unfortunately it is impossible to keep up such a strain of bees, or else sufficient care to do so has not been exercised So at present I do not know that you can find what you desire

Miscellaneous Questions

1. I have decided to make the production and sale of extracted honey my sole occupation. We have two flows in the fall equally as good as in the spring I am going to buy new hive bodies with Hoffman frames. If you were in this position please name the *one* size body that you would buy?
2. A friend says the 4-frame extractor cleans the combs better and without breaking them as badly as the two frame. Is that so?
3. My bees are wintering in two eight-frame bodies, sealed cover and heavily wrapped in paper. Would it be safe to move them five miles on a cool day with only the ⅜-inch entrance for ventilation? I can't move them much before the middle of March.
4. There are combs and honey in both bodies. Where will the queen start her brood-nest this spring?
5. You say the bees will take care of their own queen in a cage, but if she is caged and put in another colony above the excluder will those strange bees take care of her?
6. How will bees look that are the product of a cross between a golden and a black? Kentucky.

Answers.—1. I think nothing less than 10 frames.

2. If each is run at the same speed, I don't see why there should be any difference. It takes less force to speed the lighter one up to a high rate, so in the hands of a careless person there might be a likelihood of greater speed with the smaller one, and so more danger of breaking combs. Still, this is only a guess; I don't know.

3. I think you could safely undertake it. Keep watch, and if the bees show too much excitement give them a sprinkling of water.

4. Most likely where the brood-nest was in the fall, and that may be in either story, most likely the lower one.

5. Generally there will be some bees so good natured as to feed a strange queen; but it is safer to have the cage provisioned, and then the queen can feed herself.

6. I don't know. I should guess that some of the workers would look the same as goldens, some the same as blacks, with perhaps some intermediate.

Demaree Plan—Storing Empty Combs

I would like to ask some questions about a plan you mention on page 351 of the American Bee Journal for October, 1914, which you call the Demaree plan. You say just before swarming, put all the brood but one frame in a second story over an excluder, leaving the queen below with one frame of brood and empty combs of frames filled with foundation.

1. Do you cut out all queen-cells at this time if there are any?
2. Is it necessary to examine each colony about every 10 days to remove queen-cells afterwards?
3. I would especially like to know how it would do to raise up the top story after two or three weeks and place a super with sections beneath it, and then if the season were good just keep on adding more comb supers as needed, always placing the empty one underneath, the same as when running for comb honey only; that is, I would like to get all section honey except the one top story of full frames. Do you think this could be done?
4. How can I keep empty combs from one season to another and not have them destroyed by the wax moths? Iowa.

Two Colonies of E. F. Rehberg, in the City of New Haven, Conn.

Answers.—1. Yes.

2. Generally it ought not to be. The idea is that the bees are in the same condition as if they had swarmed naturally. Of course, it sometimes happens that when a natural swarm is hived it throws off a swarm the same season, but that is exceptional. Some have reported that they never have a colony swarm that has been treated by the Demaree plan, while it fails with others. You can tell by trying whether it is a success with you.

3. It will work all right if the season is good enough to fill both the brood-combs and the sections. But you must expect that so long as there is plenty of room in those old combs the bees will not do very much in the sections.

4. There is no way so good as to leave idle combs in the care of the bees themselves. A colony not so very strong can be induced to take care of four or more stories of combs. Put two or three stories of combs below the colony, and two or three stories above. With a strong colony it will work all the better; but of course it will not do for a colony working on sections.

You may also submit the combs to the fumes of carbon disulfide, which will kill not only the larvæ of the moth but also its eggs, and then if you seal up the combs moth-tight they will be safe. If the combs have had outdoor freezing all winter, then they will need no fumigating, only the moth must be kept from them.

Moving Bees to and from Out Yards and Home Cellar

1. When bringing bees from out yard to home cellar, should they be given a flight before put into cellar?

2. When taking bees from cellar, should they be given a flight before being taken to out yards? OHIO.

ANSWER.—1 and 2. Yes to both questions. At least it is better. Bringing home from the out yard causes a good deal of excitement with extra consumption of stores, and so the bees are not in quite so good shape for the winter's confinement as if they have the chance for a flight Still, it may happen that they are brought home when there is no likelihood they will have weather for a flight, in which case it is better to put them right in the cellar. In the second case it does not make so much difference, but it can seldom happen that they will not have a chance to fly before being hauled away.

Water in Bee Cellar—Concrete Floors

On Jan. 16, we had a heavy rain and about 3 inches of water fell. My eaves troughs did not carry the water, and it ran down my cellar walls I dipped up about two pails full. The floor is damp in under the hives, where I cannot dry it, and two of the side walls. The temperature at the bottom is 44 degrees; on top 50 or 52 degrees. So far the bees have wintered finely, as far as I can tell. I have 106 colonies in the cellar, size 10x18 feet, and 9 feet deep. Is that too many? The cellar walls are made of concrete. I dug this cellar last August; the floor is concrete also. Did I make a mistake by concreting the floor? How would it be to put a stove in the cellar and have a fire for several days, even if the temperature went up to 65 or 70 degrees? Would it hurt the bees? I am heating foot stones and putting them down cellar. Will this do more harm than good? WISCONSIN.

ANSWER—The quality and temperature of the air are things to be considered. If these be all right, water in the cellar will do no harm. One case attracted attention some years ago in which bees wintered in excellent condition in a cellar with a constantly running stream of water. But with a wet cellar bottom it is better to have the temperature a little higher than if the cellar were dry. Your heated stones will likely do good rather than harm. A stove might be all right, too, only don't have an oil stove without some sort of chimney to carry the gases out of the cellar. Raising the temperature temporarily to 65 or 70 degrees might do good if the bees were uneasy, but not necessary if they are quiet. In any case it would not do to continue it long.

Your cellar is large enough for the bees you have in it. The concrete floor is not considered the very best. Years ago Adam Grimm built a special bee cellar with a concrete floor, or its equivalent, and it was not a success. Still it might not have been entirely the fault of the floor. Some object to a concrete floor because the noise or jarring of one pile of hives is communicated to others.

Extractor Speed—Brood Combs

1. I would like to know the speed that a honey extractor must run to do good work. I have some cog wheels speeded three turns of the smaller to one of the larger. Will that speed enough to extract honey?

2. Should the brood frames be extracted, and can it be done without injuring the brood? GEORGIA.

ANSWERS.—1. Three to one will give you plenty of speed; all that is necessary is to turn fast enough. Indeed, there is no trouble about getting speed enough with no cogs at all. The first extractor I knew anything about had none; each revolution with the hand made a revolution with the baskets.

2 Unless you are very careful you are likely to throw out brood if any is in the comb; and it is not considered best to extract honey from such combs.

Getting Colonies "Boiling Over" for the Honey Flow

Several years ago my uncle moved to Madison, Wis., and donated to me his bees (3 colonies in box hives), which I accepted, and since that time we have had more or *less* honey for our own use. Several times I have tried to get at the inside workings of beedom, but I confess it has been considerably like "Greek" to me.

At present I have 17 colonies in the cellar (8 frames each of Hoffman pattern), and they seem to be doing nicely. Within the last few weeks I have had a rather severe attack of bee fever. I want to see if I can't really make my bees do something worth while—not get an enormous crop of honey every year, but to do at least as well as the average "modern" beekeeper. Next spring I hope to clip my first queen's wing. I have taken the American Bee Journal during the past year, and the pages that interest me, at least as much as any, are those containing your department of questions and answers; hence I have a few questions which I trust you will answer through your columns. I confess I have somewhat of a dread of asking foolish questions, and I am quite sure if I "seek diligently" I can find answers to most of my queries without asking questions, but I have been helped through your answers to questions that have been asked by others—some of which may have seemed rather foolish to you perhaps, so my questions may possibly help some other amateur.

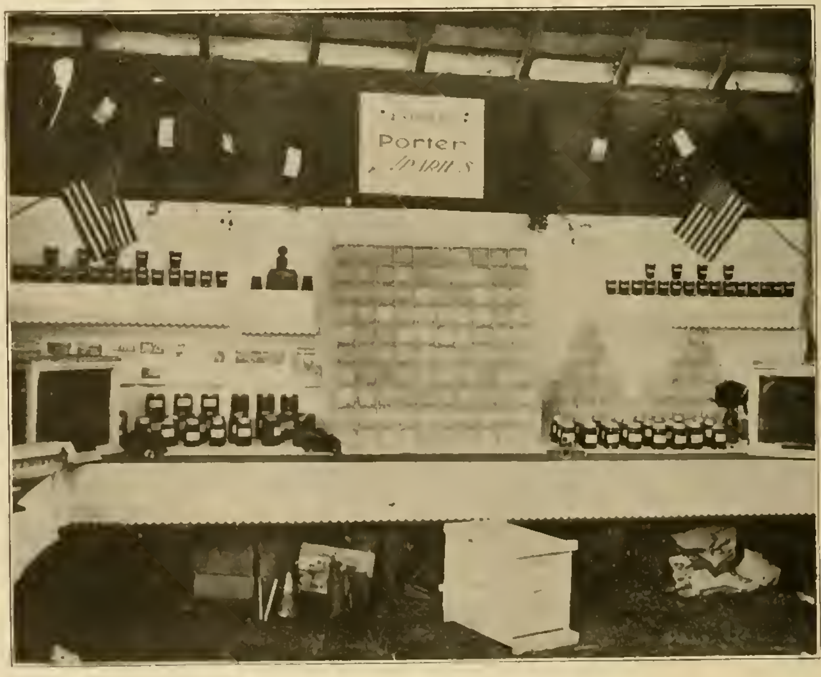
From what I have read, it seems imperative to have a hive "boiling over" with bees at the proper time if one is to get honey in the supers. Now, what is one to do if the queen will not lay but a moderate number of eggs though she has plenty of room? The following plan suggested itself to me: Two queens will probably produce more bees than one, hence why not either divide a colony as soon as practicable in the spring, placing each division side by side, and just at the beginning of the honey flow, give each colony in the evening a sprinkling of something with an odor perhaps essence of peppermint diluted, and the day when when bees are flying, take one hive away, and if necessary move the other on the line tha formerly divided the two. Or, instead o making equal division, use a small division from some other colony placed by the main dependence and treated as above. Use divisons for increase if desired or double up late in the fall. Might not a moderate laying queen produce stronger bees than a very productive one? How would it be to place under the brood a super of shallow frames of comb for building up purpose in the spring, if a 10-frame hive is used? Would a queen be any more inclined to go down into the shallow frames than into another full depth body? WISCONSIN.

ANSWER—I'm not likely to receive a severe shock from receiving foolish questions. First, because I've answered so many that it's hard to get up any of a new kind; and second because I've a vivid recollection of the time when I wanted to ask the same kind of questions myself, but had not the chance that this department affords. So don't hesitate to ask.

You are quite right in thinking it important to have strong colonies ready for work when the harvest begins, but you are not so right in thinking that you have weak colonies because the queens will not lay enough. At least the chances are 99 in a hundred that you are wrong. For in that one case in a hundred it may happen that the queen is so poor that she will not lay enough eggs under the most favorable circumstances; but it ought hardly to be one in a hundred. The likelihood is that you never had a queen but would have laid twice as many eggs as she actually did lay in spring if she had had the proper encouragement.

Like enough you had a queen last spring that at one time kept only four frames filled with eggs and brood. She might have laid more eggs, but what use? She was laying all her bees could cover, what more could she do? If you had taken from some other hive enough bees to double her family, she might have laid double as many eggs or more.

If, on the other hand, you had taken away half of her bees, you would thereby have caused her to lay only half as many eggs *or less*. So you see your scheme would lessen instead of increasing the number of eggs.



W. L. COX, OF PORTER, WASH., BELIEVES IN HONEY EXHIBITS

The reverse operation would work better, and more than once I have united weak colonies early in the season. Please remember this: A colony of 20,000 bees will accomplish more, either at building up or at storing honey than two colonies of 10,000 each, even if each of these two colonies has as good a queen as that of the first colony.

So far as I can judge I would expect just as vigorous bees from a queen laying 2000 eggs a day as from one laying 1000.

At or a little before the time the bees have filled one story with brood in spring it will work well to put a second story under, but they will not work down any more rapidly into a shallow chamber than into one of full depth.

REPORTS AND EXPERIENCES

Report from Mr. Doolittle

We are having lots of snow here and much zero weather, which, together with high winds, has so piled up the snow that our roads are almost impassible; but as the bees are in the cellar they are not harmed. They seem to be wintering well.

G. M. DOOLITTLE.
Marietta, N. Y., Feb. 5.

Queens Already Laying in January in Texas

This forenoon I examined a yard of 53 colonies, and found quite a few with eggs and sealed brood. Last week I found several colonies with hatching brood in them. The winter has been very mild, and there was a late fall honey flow, and my queens were nearly all reared in the fall.

Beeville, Tex., Jan. 20. C. S ENGLE.

Summary of the Season in Minnesota

The spring of 1914 was cold and rainy; in fact, during the month of June we had 17 days of rain, and on days it did not rain it was so cool and cloudy that bees could work but half the time, consequently when white clover and basswood were at their best, little surplus honey was gathered.

Then after the rainy season was over, a very dry and hot spell came which again stopped the flow. I started in the spring with 68 colonies, increased to 83, and had I let all my bees swarm, I would have secured but little surplus honey. However, by making but little increase and attending strictly to everything needed in a well conducted apiary, we managed to secure a surplus of 2500 pounds of fine honey.

We had a nice fall flow from hearts-ease, goldenrod and other fall flowers, and the bees filled their brood-chambers so that for the first time in years I did not have to feed one pound of syrup.

We had a most remarkable fall. November 26 the bees still gathered pollen from dandelions, which were very numerous at that time. My 75 colonies went into the cellar Dec. 7, and so far have wintered perfectly. The regular covers were all left off, but a ½-inch flax fiber cover was put on. The makers claim that these flax covers will absorb all moisture inside of the hive, and that no moldy hives will be found in the spring.

One inspector says that the outlook for a good honey crop is very promising, so we beekeepers are all hopeful, but we should remember the old saying, that "There is still many a slip yet between the cup and the lip." G. A. BARBISCH.

La Crescent, Minn., Jan. 14

Sweet Clover in Montana

The Planthead valley has been considered a very poor honey country, but this season we had about seven acres of sweet clover in bloom; three acres we cut for hay after it was about three weeks in bloom, the balance we let stand for seed and threshed 25 bushels of seed. This was the large biennial yellow *Melilotus officinalis*. It makes a better hay than does the white variety, and is so much easier cured. It can be cured in the windrow easier than alfalfa. The white variety has to be cured in the swath, then by that time the leaves all drop off and there is nothing left but a lot of very coarse leaves.

The yellow makes a better quality of honey, too. Our bees took advantage of the situation and filled their hives with as nice a lot of honey as I ever saw.

We aimed to seed some 25 acres early this year. The reason we will seed early is that the seed has a very hard shell, and if sown in the spring it sometimes doesn't sprout until the next spring. By sowing it late in the fall, if it is necessary to harrow it in the spring it can be done. That will insure a stand the first year.

Some think that stock will not eat it; this is a mistake. All our stock eats it. We have an orphan colt six weeks old that eats it in preference to bright clean oats hay, and if any one wants a permanent pasture let them plant sweet clover. Cattle and horses will eat it down to within two inches of the ground, and right there, next to the ground, it will bloom and form enough seed to reseed itself.

When this plant is better known, it will take the place of that treacherous plant alfalfa for more than one reason. Firstly, it doesn't bloat cattle nor sheep; secondly, it will grow on wetter and drier soil than will alfalfa, and it contains more protein than alfalfa It is healthier and more wholesome feed for cattle and horses than alfalfa.

On sheep and hogs I have never tried it. It is not as palatable to horses and cattle as is alfalfa, when they first have to eat it For bees the two varieties ought to be planted; the yellow will bloom two weeks earlier than the white. By sowing both varieties for bees, they would have pasture all summer. JOHN D. KAUFMAN.

Kalispell, Mont., Nov. 2, 1914.

Season Good But Market Off

The season was fair here as regards the amount of honey produced, but the market is off. We are getting locally for a very fair grade of light amber only 4 to 4½ cents when we can find some one willing to buy. I averaged about 200 pounds per colony, extracted. I hope that conditions will improve at least enough to enable me to take all the bee papers that I want.

Escondido, Calif. CHAS. V. SCHNACK.

Exhibits in Washington

Attached are photographs of bees and honey. Number 1 is a part of my exhibit for this year. I had a corner space 8 feet on the end of the building and 16 feet of side space; the 16 feet is all that shows in the photograph. There is a gauge over the comb honey so it does not show as well as it might I had three observation hives; two show on the ends, but you could not tell what they are

This was considered the best exhibit on the ground. One feature was live bee demonstrations by Master Roy Cox, my 8 year old son, who worked without hat or veil of any kind, and with his sleeves rolled to his elbows. Of course, it was necessary for me to stay in the cage with him.

We had a queen's wing clipping contest and a bee quiz. The quiz was won by a 16-year old boy who scored 98 points. There were 12 entries, and the lowest score was 48. Those contests were all for school pupils. The premiums amounted to $20

Number 2. is a home-made observation hive; it was mine also. About $35 in cash premiums were paid last year. I was barred from competing.

I have 155 colonies. My best yielder this year produced 180 sections. I had 26 colonies, spring count, bought 125 this fall. I expect to increase to 175 in the spring.

Porter, Wash. W. L. COX.

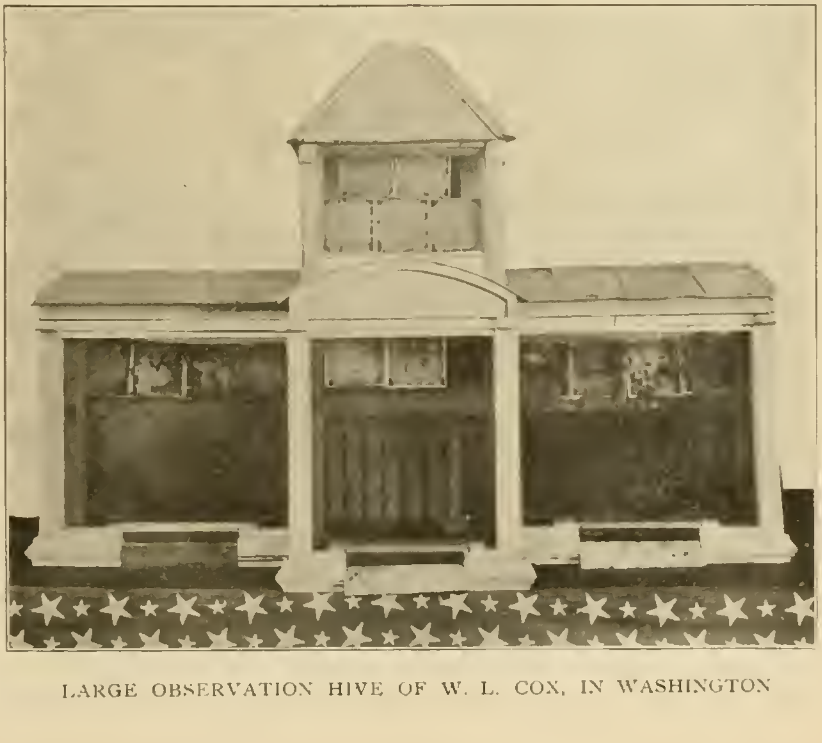
Pollen in February

Prospects look good to me for the coming season. Last season's crop was an average of 8 pounds of comb honey per colony. Lots of pollen rolling in from maple. I enjoy reading articles written by our able beekeeper, Mr. G C Greiner, which is well worth the price paid for the Bee Journal, to me at least. But I hope he will tell through the Journal about half swarms (page 21).

Rayville, La. W. R. CUNNINGHAM.

Flour for Early Pollen Substitute

When giving flour or meal to bees in early spring as a substitute for pollen, we pack it with the hands into little mounds or lumps, exposed in boxes in some sunny, sheltered



LARGE OBSERVATION HIVE OF W. L. COX, IN WASHINGTON spot. The loose flour would otherwise be blown about by the fanning of the bees' wings, and many would literally drown in it. Dr. Bonney suggests the following:

When giving my bees a large quantity of flour in the spring, I lay over it a piece of wire cloth, and one with ⅛-inch mesh is not too large. Put the flour into a box, cut the cloth to fit inside loosely and lay it on top the flour. As the bees take away the feed the wire settles down, thus preventing them getting smothered.

Buck Grove, Iowa

Foulbrood Decreases Number of Beekeepers

It seems to me that beekeepers who are advising every farmer and everybody else to keep bees are laying up very much trouble for themselves.

Beekeeping is the business of an expert. This theory that there is plenty of honey for all may be true enough some years. But what about poor years? Then the average farmer has too many irons in the fire to pay much attention to his bees at the right time. Then the real danger to meet is foulbrood.

I know of one village in whose vicinity there used to be over 500 prosperous colonies, and two years after only one colony remained; and that one came in from outside territory as an absconding swarm—foulbrood caused it. Such is the report from several localities near me.

I have been keeping bees about 25 years, but putting in most of my time raising stock and farming. A few years ago I concluded that I would rest a little from my labors in other lines and pay more attention to bees. I got Tri-state hives and some queens from the best breeders. The number of queens that I have introduced is limited, but I never have lost one yet in introducing. I have followed the directions on the cages, the smoke method, the wire cage over the hatching brood, and simply daub them good with honey and drop them between the frames. My experience would lead me to believe that a colony must be queenless for a time. The bees seem to know and like a good queen.

Jno. M. Bixler.
Corning, Iowa.

Classified Department

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Caucasian and Carniolan queens from the original importer. See larger adv't.
Frank Benton, Cher. Sta., Washington, D. C.

Untested Queens, 75c each; $7.50 per doz. Nuclei, $1.25 per frame. Bees, $1.50 per pound. Full colonies, 8-frame, $6.50; 10-frame, $7.50.
Stover Apiaries, Mayhew, Miss.

Queens—The quality kind, 3 band Italians only. Winners at Hartford and Berlin, 1914. Untested after June 1, $1.00.
A. E. Crandall & Son, Berlin, Conn.

Italian Queens, bees by pound. Descriptive list free. Apiaries under State inspection. Leaflets, "How to Introdece Queens," 15c, "How to Increase," 15c. Both, 25c.
E. E. Mott, Glenwood, Mich.

Notice W W. Talley will sell bright Italian queens this season at 60c each, $7.00 per dozen. Safe arrival guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Queens, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

Phelps' Golden Italian Bees are hustlers.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Early Bees—The last part of April I will ring north from my South Carolina yards quantity of bees. If you need bees by the ound, write for prices. Catalog of supplies nd bees upon request. I. J. Stringham, Apiaries; Glen Cove, L. I. 105 Park Pl., N. Y.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

Queens of Quality—I am booking orders for early queens now. Three-banded Italians only. Circular free.
J. I. Banks, Dowelltown, Tenn.

For Sale—After May 15, two carloads of Italian bees in 10-frame hives on metal spaced or Hoffman frames; new combs. Will quote prices delivered if preferred.
The J. E. Marchant Bee & Honey Co.,
Apalachicola, Fla.

Italian and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.
Grant Anderson, San Benito, Tex.

Place your order early to insure prompt service. Tested, $1.25; untested $1.00. Italians and Goldens. John W. Pharr,
Berclair, Tex.

Try my best bright yellow queens. They are beautiful and good honey "getters;" 60c each or $7.00 per dozen. Safe arrival and satisfaction guaranteed. M. Bates,
Rt. 4, Greenville, Ala.

Notice—R. A. Shults will sell Italian queens in the season of 1915. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00. Breeders, $5.00. Bred from Moore and Doolittle stock. R. A. Shults,
R. F. D. 3, Cosby, Tenn.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

I can supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed'
I. N. Bankston, Buffalo, Tex.

From Southern New Mexico—My yards will be able to furnish you bees by the pound at an early date. No disease. Satisfaction must be yours. Write at once. I can surprise you on prices. Established in 1914. S. Mason, Hatch, New Mexico.

California Queens, Nuclei and Bees bred from the best Doolittle stock, ready for shipment at once. Queens, untested, 75c; dozen, $8.00. Tested, $1.25; dozen, $12. Mismated, one year old, 50c; dozen, $5.00. Tested, one year old, 75c; doz., $8.00. Nuclei, 2-frame, $1.50; 3-frame, $2.25; 5-frame, $3.00; 10-frame colony, $4.50. Bees by pound, ½ lb., 75c; one lb., $1.00. Add prices of queens desired to all above prices of bees and nuclei. Delivery guaranteed. No disease.
Spencer Apiaries Co., Nordhoff, Calif.

Wanted—To send our list to you of our famous honey gathering and almost nonswarming strain of Golden queens. No better bees of any strain to be found. One fr. untested, $1.00; 6 for $5.00; 12 for $9.00. Write us what you want. T. S. Hall,
Talking Rock, Ga.

For Sale—After May 15, two thousand pounds of Italian bees in any size package with or without queens. Any size order accepted. Write for our circular on prices of bees and queens. Our queens are Island bred, and pure mating guaranteed.
The J. E. Marchant Bee & Honey Co.
Apalachicola, Fla.

For Sale—Attention! Southern Beekeepers, I have the agency for Weed Process Foundation, made by a famous manufacturer. Can make attractive prices. I pay freight to your station anywhere in Louisiana in 100 pound lots. Am paying 28c cash or 30c in trade for good wax delivered here.
J. F. Archdekin, Big Bend, La.

500 Sample Queens at 40c on first 500 orders. Moore's Strain Leather Colored Italians. Write for particulars and prices in quantity. April and May orders booked now on 10 percent deposit. Orders filled promptly or notice given when such deliveries can be made. Regular prices: Untested queen, 75c; six, $4.25; twelve, $8.00. Timberline Riggs, breeder.
Ogden Bee & Honey Co., Ogden, Utah.

"A Guide Post"—A guide post that directs to a big honey crop is good queens. We have them, untested goldens or three-band Italians, $1.00 each; $4.25 for six; $8.00 per dozen. Lots of 100 or more, 60 cts each. Tested queens, $1.50 each. Best breeders, $5.00 each; full 8-frame single story colonies, $5.00 each. Safe arrival and good satisfaction. Best new crop orange blossom extracted honey; fine indeed. Write for prices.
Rialto Honey Co., Box 73, Rialto, Calif.

I will again sell bees and queens shipped from north Louisiana in April. In cages, 1 pound, $1.50; 2 pound, $2.50. In nuclei, 2 comb, $2.75; 3 comb, $3.75. Six or more at one time to one address 5 percent discount. 1914, or young Italian queens for business; $1.00 extra. Queens only at $1.25. Shipments will be put up by experts under my personal supervision. I will try to please. A receipt in good condition will be taken. Part payment will secure the order. Bees shipped from Jonesville and Black River, La.
H. C. Ahlers, West Bend, Wis.

Pure Three-Banded Italian Queens ready from May 1, 1915, and furnished till Nov. Booking orders now for queens to be sent later at any time between dates named above. I will refer you to Mr. J. S. Ward, State Inspector, as to the health of my queens and my method of rearing the same and their working qualities. Satisfaction and safe delivery guaranteed to you. Unt. queen, 75c each; 6 for $4.00; 12 for $7.50. Sel. unt., $1.00 each; 6 for $5.00; 12 for $9.00. Tested, $1.50 each. Sel. tested, $2.50. Breeders, $5.00 and $10 each. Write for 50 and 100 rates or over to Curd Walker,
Queen Breeder, Jellico, Tenn.

Gray Caucasians—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application. J. J. Wilder,
Cordele, Ga.

Moore's Strain and Golden Italian queens. Untested, one, $1.00; 6, $5.00; 12, $9.00; 50, $35. Carniolan, Banat and Caucasian queens. Untested, one, $1.25; 6, $6.00; 12, $10. Tested, any kind, one, $1.50, 6, $8.00. Choice breeding queens of any kind, $5.00 each. Nuclei, 2-frame, $2.50; 3-frame, $3.25; 10 frame, full colony, $5.00. Bees by the pound, $1.25. Add price of queens desired to all above nuclei and bees. Comb foundation. Circular free. Genuine orange blossom and mountain sage honey, one gallon can, $1.20; five gallon can, $5.50; case, two five gallon cans, $10. Samples, 10c each. Everything securely packed or crated and delivered at Orange depot. Safe arrival and satisfaction on everything we ship guaranteed. W. H. Rails, Orange, Calif.

HONEY AND BEESWAX

FOR SALE—Fancy orange-blossom honey. Send for price list. James McKee. Riverside, Calif.

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Extracted honey, basswood and light amber in 10-lb. pails. Can be sent by parcel post. Write for prices. E. E. Mott, Glenwood, Mich.

FOR SALE—Nice, thick, well ripened amber extracted honey; mild flavored; two 60-pound cans to a case. Single cans, 8c; by case, 7c; ten case lots, 6½c per pound. H. G. Quirin, Bellevue, Ohio.

FOR SALE — Spanish-needle, hearts-ease No. 1 light comb, $3.00 per case; fancy, $3.25. Mixed fall comb, $2.50 to $2.75 a case; 24 Danz. sections to case. Extracted, 120-lb cases 9c per pound. W. A. Latshaw Co., Carlisle, Ind.

EXTRACTED HONEY—Best Water White and nice Amber Alfalfa in 60-lbs., 30-lb., and smaller tins. State quantity you want. Special prices on ton lots or over. Several carloads just in. Dadant & Sons, Hamilton, Ill.

SUPPLIES.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog. A. E. Burdick, Sunnyside, Wash.

BROTHER BEEKEEPERS, send for my new prices on Supplies. I can save you money. Beeswax wanted. W. D. Soper, Jackson, Mich.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., 4Atf Greenville, Tex.

LEWIS BEEWARE—Root's extractors, smokers, etc. Dadant's Comb Foundation. Large stock always on hand for prompt shipment. Western beekeepers can save money by patronizing the oldest co-operative association of beekeepers. Illustrated catalog free. The Colorado Honey Producers' Ass'n. Denver, Colo.

WANTED

WANTED—200 drawn out wired Langstroth size frames. J. B. Mason, 33 Lexington St., East Boston, Mass.

WANTED—500 to 1000 Hoffman self-spacing frames, filled with drawn comb. P. A. Spellman, Armstrong Creek, Wis.

WANTED—Family to build up an apiary and small fruit orchard. When not busy with bees and small fruit can have employment in orchard, garden, on farm. Give reference and state particularly experience with bees. Box 715, McCook, Nebr.

POULTRY

FOR SALE—Wild Mallard Duck—12 eggs, $3.00 Ashmead, Williamson, N. Y.

SITUATIONS.

I WILL work bees on shares or for salary. Would want 150 colonies at least. 25 years' experience. Understand bee diseases. Orie N. Britton, Hudson, Mich.

WANTED—Situation by a young man as student; no bad habits; a willing worker. Wages no object. Will Loge, 540 Herman St., Milwaukee, Wis.

WANTED—Man to work eight months caring for ten acres of potatoes and garden. Begin April. Name salary. Give experience. No booze fighter, dope or cigarette fiend wanted. Big Horn Apiary. Rt 1 R. F. D., Hardin, Big Horn Co., Mont.

FOR SALE

WHITE SWEET CLOVER, machine cleaned unhulled seed $4.80 bushel; hulled seed, $13.50 bushel. Wesley Foster, Boulder, Colo.

FOR SALE—40 lots in Elk City, Okla., ½ in orchard and vineyard. Price, $50 per lot. Rev. F. W. Knappe, Alta Vista, Iowa.

PANGBURN wants you to write for illustrated circular describing his new foundation fastener, the fastest, easiest handled machine on the market. Invented and mfg. by W. S. Pangburn, Center Junction, Iowa.

FOR SALE OR EXCHANGE for honey or beesuplies, 1912 8 H. P. American twin cylinder motor cycle. Cost $240. What's your offer? Emil E. Nelson, Route 2, Renville, Minn.

MISCELLANEOUS

How many people are there who really kuow what good Queen Bees are? We suspect that thousands of beekeepers know, so we claim to know, and can sell good queens to all who wish them. The well known three-bands and Goldens. Untested, $1 00 each; $4.25 for six; $8 00 per dozen. Tested, $1 50 each. Full eight-frame hives with untested queens, $5.00 each. Bees in pound packages, $1 25 f. o. b Riverside. Promptness and honest treatment, and of course satisfaction and safe arrival. Do not return dead queens to us; just state it on a postal, and we will return one at once. Golden Rule Bee Co., Riverside, Calif.

CARNIOLAN QUEENS

in Season. Orders booked now for queens and bees by the pound. A few 8-frame colonies for April delivery. Price $9.00 f. o. b. here.

Ask for our Paper "Superiority of the Carniolan Bee". It's free. Get acquainted with the merits of these bees before placing your orders. Carniolans stand cold winters best, breed up fast in spring, are very gentle, and the best of honey-gatherers.

ALBERT G. HANN, CLINTON, N. J.

Get the Atchley Queens

It took 30 years to produce the good qualities obtained in this strain of three banded bees. If you haven't some of this stock in your apiary now, you will have some day.

Untested, $1 00 each, or $10.00 a dozen. After April 15, 75c each, or $8.00 a dozen. Good tested ones $1 50 each. I can sell you bees or nuclei cheap; write for prices. Satisfaction of all bees and queens guaranteed.

Wm. Atchley, Mathis, San Patricio Co., Texas.

CLOSING OUT SALE
—OF—
BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
"Pearce's Method of Beekeeping" (50c)	.30
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.30
Muth Bee-Veil (75c)	.60
Danzenbaker Bee-Smoker ($1.00)	.80
	$3.60

Or *all* the above in one order to one address *for only $3.00.* (The retail price of the bunch is $4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

SWEET CLOVER SEED
FOR BEEKEEPERS

We have on hand a supply of Sweet-clover Seed which we offer for sale at the following prices as long as our present stock lasts:

	1 lb.	10 lbs.	25 lbs.	100 lbs.
White Sweet Clover unhulled, hand screened)	20c	$1.80	$4 00	$15 00
" " " (unhulled, recleaned)	25c	2 25	5.00	18 00
" " " hulled, recleaned)	35c	3.00	6.75	25.00
Yellow " " (hulled, recleaned M. officinalis	25c	2 30	5.50	20.00
Alsike Clover Seed	25c	2.25	5.00	19.00

SPECIAL PRICES ON LARGE QUANTITIES

The recleaned seed is machine cleaned, and is free from chaff, dirt, and light seed. All seed f. o. b. Hamilton, Keokuk or Iowa at the above prices. No charge for bags.

DADANT & SONS, HAMILTON, ILLINOIS

YELLOW SWEET CLOVER—Many people fail to recognize the value of Yellow Sweet Clover as a honey plant. The fact that it blooms two weeks earlier than the White variety makes it especially valuable to the beekeeper. Be sure however, to get the *Melilotus officinalis* as quoted above.

HONEY AND BEESWAX

CHICAGO, Feb. 11.—The market on comb honey is quite strong at 17@18c per pound for the best grades of white comb. The ambers range at from 13@15c per pound. The volume of trade is not large, but there is no surplus of stock. That which is candied or out of condition is sold at whatever the opportunity offers. Extracted is still plentiful and the prices are easy on all grades with the exception of clover and basswod, which ranges at about 9c per pound, with something fancy in a small way at 10c per pound. Amber grades sell at from 7@8c per pound if suitable for table use, but carload quantities are easily bought at 6c per pound. Beeswax is steady at 30c per pound where it is of good color and free from sediment. R. A. BURNETT & CO.

KANSAS CITY, MO., Feb. 10.—There is very little change in our honey market since our last quotations. The supply of comb is not large, and the demand only fair. The supply of extracted is large, the demand light. We quote: No. 1 white comb honey, 24-section cases, $3.25 to $3.50; No. 2, $2.75 to $3.00. No. 1 amber, $3.00; No. 2, $2.50 to $2.75. Extracted, white, per pound, 7½@8c; amber ranges according to quality and quantity from 5½@7c. Beeswax is quoted at 28c a pound for No. 1, and No. 2 at 25c a pound.
C. C. CLEMONS PRODUCE COMPANY.

BOSTON, Feb 15.—Comb honey is moving slowly. Mostly western, 15@17c. California amber, extracted, 8½@9c; white, 10@10½c.
BLAKE-LEE COMPANY.

INDIANAPOLIS, Feb. 12.—The market for extracted honey is brisk, especially so for white clover and California sage. The demand for comb honey is hardly satisfactory. We quote No. 1 choice white comb at $3.50 to $4.00 per case. Fancy amber at $3.60. White clover and California sage extracted in 60-pound cans, 10@11c. We are paying 28c cash or 31c in trade for pure average wax delivered here. WALTER S. POUDER.

CINCINNATI, Feb. 12.—The demand for comb and extracted honey is somewhat improved, and conditions in general look more favorable. Comb honey is selling at $3.50 to $4.00 per case. Amber extracted honey from 5@7½c a pound, according to the quantity and quality purchased. For strictly fancy white clover extracted honey 10c a pound in crates of two 60-pound cans. We are paying 30c a pound delivered here for choice bright yellow beeswax, or 32c a pound delivered here in exchange for supplies.
THE FRED W. MUTH CO.

DENVER, Feb. 12.—We have a small supply of comb honey again, which is being offered at the following jobbing prices: Fancy white, $3.15 per case of 24 sections; No. 1, $3.00 per case, and No. 2 at $2.85. There is a fair demand for strictly first-class white extracted honey. Our local jobbing prices are 8½@8¾c for white; 8@8¼c for light amber, and 7@8c for amber strained. We buy beeswax and pay 28c in cash and 30c in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

NEW YORK, Feb. 18.—There is very little doing in comb honey. There is some demand for No. 1 white stock, which is selling at around 14@1 c per pound, while off grades are neglected altogether. Buckwheat is pretty well cleaned up at this time. As to extracted, the demand is only fair, and mostly for choice grades of which there is not an overstock, with prices ruling from 8@9c per pound, according to quality. Large quantities from the West Indies have been and are arriving at this market, and prices on these grades are ruling very low, and we can see no indication for any improvement for the time being. Beeswax is quiet, selling at from 28@30c per pound according to quality. HILDRETH & SEGELKEN.

STANDARD DOVETAILED HIVES shipped direct from factory in Iowa. Fine 8 frame for $6.00. Hoffman frames, $2.75 per hundred. Plain sections, $4.20 per M. Write for prices on what you need—a full line.
The Stover Apiaries, Mayhew, Miss.

Untested Italian Queens

For a number of years we have been furnishing Italian queens to our customers, and their words of encouragement have led us to believe that our services are appreciated. Being in touch with many large breeders, we are in a position to furnish untested queens of first quality with but little delay. We can furnish either ordinary leather-colored or bright yellow queens as preferred. Prices as follows:

BEFORE JULY 1.

1 untested	$1.25	Tested Queens
6 "	5.50	$1.75 each
12 "	10.00	

AFTER JULY 1.

1 untested	$1.00	Tested Queens
6 "	4.50	$1.50 each.
12 "	8.50	

Special prices on larger lots on application.

Caucasian Queens

There has been much inquiry for this race of bees. We can fill orders for these queens at the same rates as above.

As an introductory offer, we will send you an untested Queen together with a year's subscription to the American Bee Journal for only $1.50 (10 cents extra to Canada). Add 50 cents if Tested Queen is wanted. We also can furnish nuclei, bees by the pound and full colonies. Prices on request.

Orders are booked as soon as received and filled in rotation. When ordering, however, state approximate date on which you wish queens to come forward, so that we may fill accordingly. Purity and safe arrival guaranteed.

American Bee Journal, Hamilton, Illinois.

BUCKEYE CHAFF HIVES
DOVETAILED HIVES
Sections, Comb Foundation
Choice Northern-Bred Italian Queens
Bees by the pound
General Agents for Root's Goods in Michigan
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Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.
J. NEBEL & SON SUPPLY CO.,
High Hill, Montg. Co., Mo.

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.
H. S. DUBY & SON, St. Anne, Ill.

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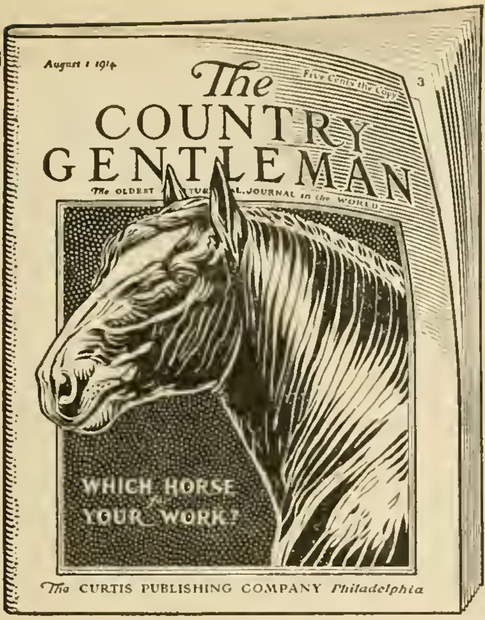
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THE BEST TIME TO BUY SUPPLIES

The season just passed has demonstrated more clearly than ever the necessity for being prepared for a honey-flow **before** it comes. If you wait until the season is upon you, the chances are that the greater part of the crop will be lost while you are impatiently waiting for supplies to arrive. It may seem a little early now to think of next season's honey harvest; but the fact of the matter is, this is just the time to order goods for next season.

We are beginning now to replenish our stocks. We shall soon have carload orders coming from the factory. Special orders placed now can have just the attention they need, both here and at the factory, and you may have your goods sent in one of our cars, thereby saving on transportation charges. Regular stock will come straight to you from our warehouse in new unbroken packages, and you can put the goods together in your odd minutes, thereby saving the expense of extra help in the spring.

Our usual discounts for early orders apply again this season—5 percent for cash orders sent in November, the discount lessening one percent per month as the season advances. These discounts mean a considerable saving, and you might as well take advantage of the highest by ordering now. No change of prices has as yet been announced, and you may, therefore, order from your present catalog. If your catalog has been mislaid, write us at once and we will send another.

C. H. W. WEBER & CO.,

2146 Central Avenue, Cincinnati, Ohio

Where the Dovetailed Hives are Made

Three floors of one of our buildings are devoted to making hives, sections frames, supers. shipping cases. queen-cages, nucleus boxes, and all other articles made of wood. A glimpse of one of these floors is given in the accompanying illustration.

Here are located the many and often complicated machines and appliances, most of which were designed and built especially for us and each one of which makes but a small part of the hive. Visitors have often expressed surprise that so small an object as a section honey box, for instance, should require so much handling and pass through so many hands until the final product is ready for shipment.

There are probably few beekeepers who have any idea how the dovetailed hive is made, and who realize that, first of all, the lumber must be carefully selected and seasoned, then cut into the right lengths, passed through the machines which dovetail the sides and ends; through other machines where they are fitted together; nailed and sandpapered; provided with rabbets in the interior, etc., etc.; while at the same time the bottom-board and the cover is made in another part of the factory, each one of which requires similar handling. The various parts of the hive are then sent to the assembling room, where they are put together, and finally to the packing room, where they are packed in such a manner as to occupy the least possible space (thus reducing the cost of transportation to a minimum), and shipped to all parts of the globe.

A Corner of One of the Floors Devoted to Woodworking

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HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

APRIL 1915

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Of C. T. and M. B. Wise, near Acton, Calif. This apiary was increased 65 percent in 1914, and produced 5000 pounds of comb honey from 63 colonies, spring count. The main source of honey is wild buckwheat and wild alfalfa

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
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Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n } **ANTHONY BIAGGI,**
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This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

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CAN SUPPLY ANY QUANTITY

Extracted honey packed in 60, 10, 5, and 2½ lb. cans

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Twenty years of breeding and selection has resulted in an exceptionally vigorous and long-lived strain of bees, unexcelled for gentleness, prolificness and honey-gathering qualities. No disease.

	Before May 1st			After May 1st		
	1	6	12	1	6	12
Untested	$1.25	$ 6.50	$11.50	$ .75	$4.00	$ 7.50
Tested	1.50	8.00	15.00	1.25	6.50	12.00
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1-lb. pkg. bees	2.00	11.00	21.00	1.50	9.00	18.00

Breeders, $5.00 each, any time.

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The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

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We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad, but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

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Alsike Clover seed, small red, mammoth, Timothy, Alfalfa, White and Yellow Sweet clover and blue grass, millet, rape, etc. Also thoroughbred seed corn. Catalog apiary supplies *free*. Write for prices on seeds and samples.

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Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

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The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, 1, $1.00; 6, $5.00; 12, $9.00; 25, $17.50; 50, $34; 100, $65. Tested, 1, $1.50; 6, $8.00; 12, $15.00. Breeders of either strain, $5.00. Nuclei with untested queen, 1-frame, $2.50; six 1-frame, $15.00; 2-frame, $3.50; six 2-frame, $20.40; nuclei with tested queen, 1-frame, $3.00; six 1-frame, $17.40; 2-frame, $4.00; six 2-frame, $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction and prompt service guaranteed.

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It took 30 years to produce the good qualities obtained in this strain of three banded bees. If you haven't some of this stock in your apiary now, you will have, some day.

Untested, $1.00 each, or $10.00 a dozen. After April 15, 75c each, or $8.00 a dozen. Good tested ones $1.50 each. I can sell you bees or nuclei cheap; write for prices. Satisfaction of all bees and queens guaranteed.

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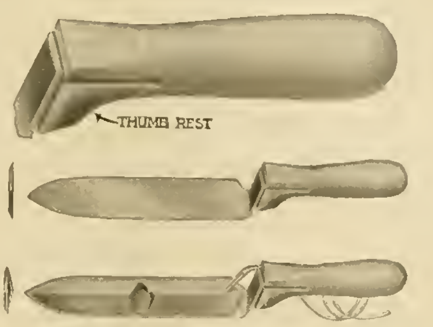
With the New Improved Cold Handle



Standard length, each	$ .75	Ship wt.,	20	oz.
Extra long "	.85	" "	24	"
Steam heated with 3 ft. tubing	2.50	" "	36	"

Our knives are made of the very best material and by the same local workmen for the past 30 years. There have been many imitators of the Bingham Knife which accounts for the various poor contraptions on the market. The new Cold Handle is a decided improvement over all others as it fits the hand perfectly; the lower part of the wood handle projects down along side the shank of the knife, forming a Thumb Rest that does not become hot when used with hot water or steam. Mr. Townsend says this knife appears to be the best yet produced.

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500 in crate	$2.50	5000 to 9500, per M	$4.25
1000 to 4500, per M	4.50	10,000 or more	4.00

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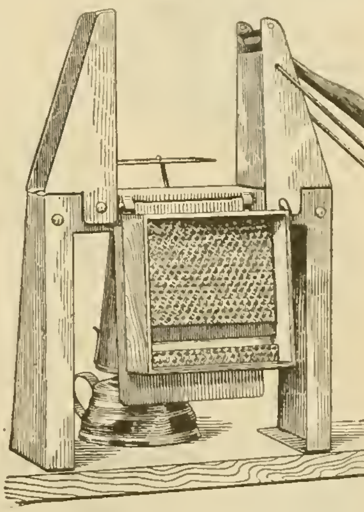
Woodman's Section-Fixer

A combined Section Press and Foundation-fastener of pressed steel construction



This machine folds or forms comb-honey sections and fastens top and bottom comb foundation starters all at one handling, thus saving a great amount of labor. It can be arranged for any width, 4¼x4¼ or 4x5 section. Other sizes, 50 cts. extra for special adjustment. Top and bottom starters insure the comb firmly attached to all four sides, a requirement to grade fancy. Increase the value of your crop by this method. If you have but ten swarms of bees you cannot afford to be without one, is the statement of one customer. Send for special circular, ten illustrations.

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Circular free

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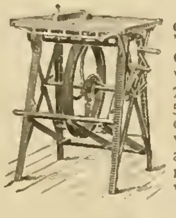

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RED CATALOG, Postpaid - "Simplifed Beekeeping," Postpaid

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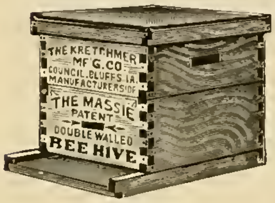
Where the good bee-hives come from

The Double-Walled Massie Bee-Hive


THE KRETCHMER MFG.CO COUNCIL BLUFFS IA MANUFACTURERS OF
THE MASSIE PATENT
DOUBLE WALLED BEE HIVE

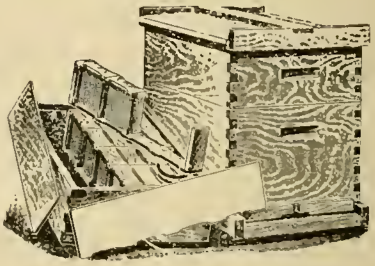
THE MASSIE HIVE
For Comb or Extracted Honey

Surest Protection for Bees—Increased Supply of Honey
The Best Hive for any Climate
Furnished in the clearest of lumber in either Cypress, White Pine or Redwood
All Brood and Extracting Frames Made from White Pine

THE MASSIE VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance for swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE** is **the very best hive,** and testimonials to this effect are received daily from those who are using this hive.


The Dovetailed Hive for Comb Honey

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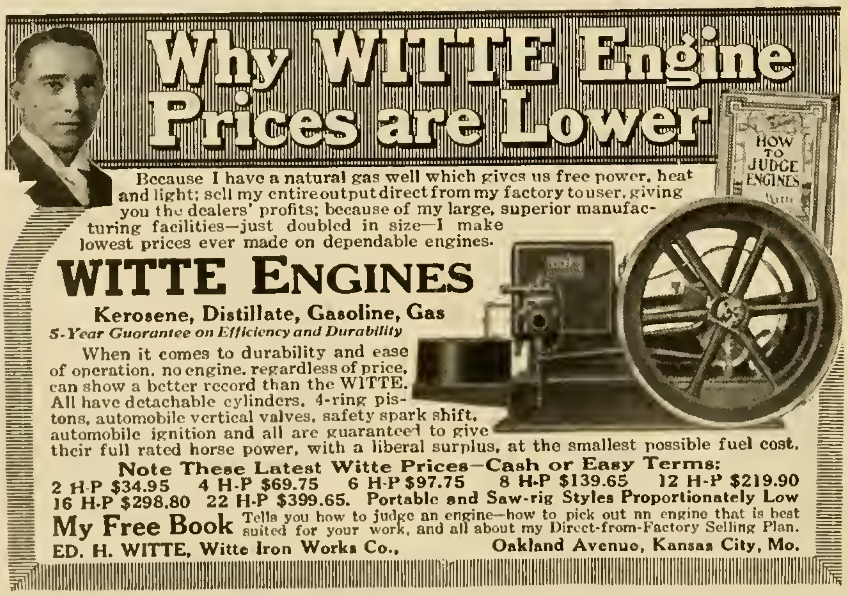
KRETCHMER MFG. CO., COUNCIL BLUFFS, IOWA


HOW TO JUDGE ENGINES
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Because I have a natural gas well which gives us free power, heat and light; sell my entire output direct from my factory to user, giving you the dealers' profits; because of my large, superior manufacturing facilities—just doubled in size—I make lowest prices ever made on dependable engines.

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Our new Bee Book of 68 pages—150 illustrations, is just off the press. Contains valuable information for beginners in bee culture, as well as for expert bee-keepers. We have everything for the apiary, including the bees. We ship same day order is received.

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This is one of the best localities for supplying Eastern trade, and especially New England.

I shall carry a full line of the A. I. Root Company's Goods, and my 1915 catalogs of Queen Bees and Supplies are now ready for distribution.

Prompt shipments and fair dealings is my aim.

I solicit your orders for Bees, Queens, Hives, Broodframes, Foundation, Sections, Smokers, Brushes, Veils, etc.

Send for my free descriptive catalog.

ROBERT G. COOMBS, Guilford, Vt.

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We want every beekeeper to have our FREE illustrated catalog of everything used by beemen, also our special price-list of

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If **quality, prices** and **service** count with you, together with saving in **freight.** Don't order your supplies until you have it.

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SAVES HONEY TIME MONEY

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Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

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Manufacturers of Lewis Beeware

Watertown, Wisconsin

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., APRIL, 1915

Vol. LV.—No. 4

EDITORIAL COMMENTS

International Congress of Beekeepers

According to the Western Honey Bee the committee of the California State Beekeepers' Association has conceived the idea of organizing an International Beekeepers' Congress at San Francisco next fall, in September or October. Good! There ought to be no difficulty in getting a good attendance from all over the United States and Canada, and perhaps some visitors from foreign countries. We volunteer to do all we can to help it along.

British Columbia

In his report on the "Honey Production of British Columbia," Mr. F. Dundas Todd, inspector, estimates the total crop for 1914 at about 200 tons. The average per colony was about 55 pounds.

Campanilla Honey

We are in receipt, from Mr. D. W. Millar, of Holguin, Cuba, of an excellent sample of white honey, which he reports was harvested from the white campanula (blue bell or bellflower). It is very fine. Mr. Millar is a very active man, and is likely to make a success of his undertakings.

Winter Consumption

Page 54, column 3. Bees wintered in cellar will consume more after put out than those wintered out. I never heard that before. I wonder if it is true; and if so, why? C. C. M.

Evidently that is not true everywhere or Dr. Miller would have noticed it. But we found it true at Hamilton Cellar-wintered bees breed very little previous to removal from the cellar, while the bees on summer stands begin breeding often as early as January. It is therefore indispensable for the cellar-wintered bees to hasten their breeding operations when taken out. The return to daylight has a tendency to do this. We ascribe the extra consumption to that cause.

This item was brought out at the Wisconsin meeting. If those who discussed it wish to express their views on this, we will gladly publish them.

C. P. D.

Dr. Phillips Made Vice-President of Entomologists

We read in "Science" that Dr. E. F. Phillips, the well-known head apiarist at the Bureau of Entomology in Washington, has been elected one of the vice-presidents of the American Association of Economic Entomologists. Dr. Phillips is worthy, if we judge by his devotion to the cause of apiculture.

Honey in Attic

Adrian Getaz says, page 63, that fall honey kept throughout the whole winter at a high temperature in "the little room in the attic" not only did not candy but ripened unusually well. That's quite true; and I want to carry it a little further. There are a good many attics, but probably not one in ten that can be kept as warm throughout the winter as the one mentioned. It is possible that that honey might have kept without candying if there had been no heat in the attic in winter and indeed if there had been no heat but that from the sun in summer. Years ago, in Johnstown, Pa., my mother kept sections of honey in an attic that was freezing cold in winter but roasting hot in summer merely from the heat of the sun. The honey kept perfectly through the winter, the heat in the latter part of summer seeming to have ripened it for winter.

Mr. Getaz says: "I presume that where there is a furnace in the house, the furnace-room would be the best substitute for "the little room in the attic.'" The presumption is correct. Section honey has kept nicely beside the furnace in winter in my cellar. But in summer that same cellar is about the worst place I could keep it.

C. C. M.

Iowa Report Exhausted

Mr. Pellett informs us that the Iowa Inspector's Report is entirely exhausted except a few bound copies to be supplied to those members who remit 50 cents for their membership in the Iowa Beekeepers' Association.

The rapid demand is a testimonial to the value of the work.

Feeding Sugar Syrup

I have read what J. L. Byer says about fall feeding of sugar syrup, page 85, with much interest—read it more than once. J. L. Byer always seems to mix in some thinking with what he says, so that it is worth considering; and yet I could wish that we might have some more positive and definite knowledge on this whole subject; for I suppose the time is not likely to come soon when there will not be some for whom it will be a convenience to feed sugar syrup, provided it may be safely done.

No one will be likely to question

that there are places where at times the honey is very unwholesome for winter food; indeed, there may be places where it is always so. In such cases sugar syrup is surely the better winter food. But I suspect that cases of that kind are quite exceptional, and that in the great majority of cases bees will winter all right, so far as food is concerned, if allowed to gather their own stores.

I lay no small stress on the thought that honey is the natural food, the food universally supplied, and so there is little chance for mistake about its being best. I will be told that we can improve upon nature. Yes, so we can, at least in a certain way. Witness the latest flowers and fruit. But has there ever been a case in which the skill of man has gotten up a better food than that supplied by nature for a whole class of beings?

For many years able minds have been devoted to devising some substitute for the natural food of the young of the human family, and we are all familiar with the pictures of plump babies brought up on "What-you-call-him's Baby Food," yet in an able article in the March number of "Good Housekeeping," occurs this rather startling statement: "Statistics have shown that ten artificially fed babies die to one naturally fed." If that is so may it not well be questioned whether any substitute can be food for the production of vigorous baby-bees?

What is the difference between sugar and honey?

The sugar fed is cane sugar, and before it can be properly appropriated by the bees it must be inverted by them. Are we sure that such inversion is always completed? And if it is, is not the extra burden thus laid upon the bees detrimental to their best interests?

There is another difference between sugar and honey that is perhaps not generally recognized, and yet which is probably greatly more important. In a German bee journal, Bztg. fuer Schleswig-Holstein, occurs this passage: "Besides invert sugar, honey contains pollen, ethereal oil, tannin, malate, tartrate, oxalate, and nitrate of potassa, several phosphates, manganese, natron, silica, sulphur, lime, iron. Hence sugar cannot replace honey. Sugar feeding is to blame that bees do not timely develop in spring. The colony reaches its strength only toward the end of the harvest. The bees reared upon sugar syrup in spring are not so effective as those reared in harvest."

If any one of these elements, however minute in quantity, be lacking in the food of the bees, it looks reasonable that not quite so fully developed a bee shall result. Since they are all absent in sugar syrup, what question can there be that bees reared thereon are lacking, perhaps greatly lacking in vigor and effectiveness? It may be said that sugar syrup is all right for winter food so long as it is used only as fuel to keep up heat. But who can gauge the feeding and have it so placed in the combs that it shall be certain that all of the syrup shall be used first and so be out of the way when brood-rearing begins, if indeed the amount be so limited that it is possible for it to be closed out before brood-rearing?

As a witness to the good results of sugar feeding, Mr. Byer subpœnas a man with hundreds of colonies, who for 15 years has managed to have his brood-nests in fall with very little honey, and then has fed each colony about 20 pounds of sugar or 30 pounds of syrup, and he says: "I would like to take the two professors to these apiaries at any time of the year, and ask them to detect any kind of weakness in these bees, caused by the heavy sugar feeding," adding that this man *always* winters successfully, and that his crops are probably second to none. I have great faith in Mr. Byer, and would as soon trust his judgment as that of two professors. I cheerfully accept his statement that no kind of weakness would be at any time detected in the bees under consideration. And yet that is not fully convincing that said bees might not have done better if they had had good honey in place of sugar. I have many times known a colony with 20 percent more effectiveness than another colony in the same apiary, and I could detect no difference in the bees by the most careful inspection.

I have serious question whether two professors could tell by any sort of inspection whether there was any kind of weakness in an apiary, even though the effectiveness of the bees had been lessened considerably by the use of incomplete food. However great the success of the bees Mr. Byer puts upon the witness stand, it's up to him to prove that it might not have been just a bit greater—say 10 percent greater—if they had not at any time been subjected to a ration of incomplete food.

C. C. M.

VOLUNTEERS IN THE AGENCY FOR LOCATION OF PRISONERS OF WAR

Commendable Work

We herewith give a picture of the Geneva Red Cross Prisoners' Agency, organized in Switzerland, with the 1200 voluntary helpers in charge of this useful work. Our dear friend, the devoted Mrs. Bertrand, whose name is well-known to our readers, is one of them, in spite of her age, 72.

Up to Feb. 1, over 83,000 families had been informed of the fate of their lost sons or husbands through this humane agency. War brings out the finest traits in human character, as well as the ugliest. Devotion is as much in evidence as brutality. Praise and love to the charitable, but shame upon the vandals.

Sweet Clover vs. Cattle Bloat

We are in receipt from our well-known friend, E. S. Miles, of Dunlap, Iowa, of a lot of testimony concerning the use of sweet clover and its effect on cattle. It consists of a dozen letters coming from cattle growers as far apart as Dayton, Mont., and Falmouth, Ky., thereby covering a scope of country extending over two-thirds of the

United States.

The following locations were heard from: Sioux City, Delmar, Algona, in Iowa; Springfield and Steward, Ill.; Bassett and Long Pine, Neb.; Falmouth, Ky.; Garden City and Moran, Kan.; Dayton, Mont.

MRS. E. BERTRAND

The reports are practically unanimous in denying danger of bloat in cattle. They ascribe this to the coumarin contained in the clover, whether this be the bitter principle or not. Only one party mentions possible bloat, and here is what he says:

"Personally, I never knew of sweet clover bloating stock, yet from my acquaintance with responsible men, there seems to have been some loss, and I would say it is probably no greater than from the common red and white clovers. I have seen a few cases from the latter and even from green oats, which I attributed to poor condition of the stock, or else not being used to the green feed, being rather in the nature of flatulent colic than the bloat which is very common on alfalfa and which is apparently impossible to guard against in cattle and sheep."

On the other hand, one man reports 400 acres of sweet clover without a case of bloat. Another reports the keeping of from 1000 to 2000 heads of cattle on it without any bloat.

J. L. Bartholomew, of Moran, Kan., says: "More dollars and cents and more feed per acre can be made from sweet clover than any other kind of forage that is grown."

It may be interesting to our readers to read that as early as the third year of the American Bee Journal, in the summer of 1867, Mr. M. M. Baldridge, still living at St. Charles, Ill., recommended sweet clover, under the name of *Melilotus leucantha*. In the same volume, page 223, a quotation from the Bienenzeitung is made, in which F. Bahr says: "In some districts it is said cattle reject it, whether offered to them in a green or dry state, while in others, it is stated, they will eat it greedily. I have no doubt both statements are correct, and based on careful observation. The soil in which it is grown makes all the difference." We are now inclined to believe that all that is required is to accustom cattle to it. After they have once tried it, they eat it greedily.

MISCELLANEOUS NEWS ITEMS

Massachusetts Meetings Canceled.—On account of the continued prevalence of the foot and mouth disease in Massachusetts, the Farmers' Week programs which were scheduled for March 15-19, were canceled as well as the convention of apiary inspectors scheduled for March 17. It is Dr. Gates' intentions to call this meeting as soon as rearrangements can be perfected. A subsequent announcement should appear in this paper.

* * *

Idaho Bill Fails.—A recent letter from State Representative George W. York informs us that the Idaho Foulbrood Bill after having passed both houses of the Legislature, was vetoed by the Governor. This is to be regretted. Idaho is a coming bee country. The earlier bee legislation is passed the easier it will be to stamp out disease.

* * *

Beekeeping Meeting at Southern Conference.—The Southern Conference for Education and Industry will hold its annual meeting at Chattanooga, Tenn., on April 27-30. In connection with this conference there will be a number of smaller conferences on various subjects of interest in the South. One of these will be on beekeeping. The general meetings are held in the morning and evening, and the smaller conferences in the afternoons.

In connection with the beekeeping meetings, it is proposed to devote the first afternoon to a discussion with farm demonstrators and teachers. The second and third afternoons (April 28-29) will be devoted to a beekeepers' conference to which all beekeepers are cordially invited. A number of prominent southern beekeepers will be present and these meetings promise to be most helpful.

* * *

Beekeeping Lectures in Boston.—Following is a list of a course of lectures on beekeeping given under the auspices of the Boston Chamber of Commerce. This is one series of lectures in their lecture course. The lectures are to be given in the Walker Building of the Massachusetts Institute of Technology in the evening, according to the dates indicated. The Chamber of Commerce requires a fee of $1.00 for the course. There may be a slight admission fee for individual lectures. Those desiring further information will address the Boston Chamber of Commerce Lecture Course or Burton N. Gates at Amherst, Mass.:

March 27.—"Beekeeping: Its Importance in Massachusetts'" Illustrated.

April 3—"The Beekeepers' Equipment." Demonstrations with apparatus for a simple, standard equipment.

April 10—"How to Begin Beekeeping and the Handling of Bees." Demonstration of methods of manipulation. Illustrated with demonstrations.

April 17—"Beekeepers' Crops; Comb and Extracted Honey Production, Wax Production, and the Rearing of Bees and Queens." Demonstrated and illustrated with lantern slides.

April 24—"Enemies and Bee Diseases; Their Control and Avoidance." Illustrated with demonstrations.

The course will be fully illustrated with stereopticon, demonstrational equipment, charts, and natural history specimens.

* * *

Beekeeping in Colleges.—Both Illinois and Wisconsin Agricultural Colleges are striving in the matter of beekeeping education and planning apiary work and courses. We will keep our readers informed upon this. Let the good work go on. We promise hearty co-operation.

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Correction of Error.—By error the March Review stated that C. P. Dadant was present at the Denver meeting. The only member of the Dadant family in attendance was the second son, H. C. Dadant.

* * *

Illinois Beekeepers!—Bulletin No. 2 containing the 4th annual report of the State Inspector of Apiaries, and much valuable information to beekeepers, will soon be out. Those wishing a copy can get one by writing a postal card to the inspector.

Putnam, Ill. A. L. Kildow,
State Inspector of Apiaries.

* * *

The Eastern New York Beekeepers' Association.—The seventh annual convention of the Eastern New York Beekeepers' Association was held at Albany Dec. 30, 1914. The unfavorable season for honey production during the past year had a depressing influence on the attendance.

Chas. Stewart, State Bee Inspector, at the suggestion of the president, repeated his remarks given at the annual meeting of the State Association, on the subject of "Feeding Back and Feeders."

Having a summer field day meet and demonstration was suggested. W. D. Wright and I. J. Stringham were elected a committee to superintend the matter and make it a success. It was decided to hold the meet at the home apiary of the president at Altamont sometime in July.

President W. D. Wright and N. D. West were elected delegates to attend the next annual convention of the State association, and were authorized to pay the annual fees due the association.

The following officers were elected for 1915:

President, W. D. Wright; 1st Vice-president, Chas. M. Hays; 2d Vice-president, Irving O. Cross; Secretary. S. Davenport, Indian Fields; Treasurer, I. J. Stringham.

The subject of advertising honey to create an increased demand for it was considered, but no action was taken.

Stephen Davenport, *Sec.*

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Grading Rules of the Colorado Honey-Producers' Association, Denver, Colo., Adopted Feb. 6, 1915.

(*All honey sold through the Colorado Honey-Producers' Association must be graded by these rules.*)

COMB HONEY.

Fancy.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, comb and cappings white, or slightly off color. Combs not projecting beyond the wood, sections to be well cleaned No section in this grade to weigh less than 12½ ounces net or 13½ ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 12½ ounces."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

No. 1.—Sections to be well filled, combs firmly attached, not projecting beyond the wood and entirely capped, except the outside row next to the wood. Honey, comb and cappings from white to light amber in color. Sections to be cleaned. No section in this grade to weigh less than 11 ounces net or 12 ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 11 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

No. 2.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 ounces net or 11 ounces gross. Also of such sections that weigh 11 ounces net or 12 ounces gross, or more, and have not more than 50 uncapped cells altogether, which must be filled with honey. Honey, comb and cappings from white to amber in color. Sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

COMB HONEY THAT IS NOT PERMITTED IN SHIPPING GRADES.

Honey packed in second hand cases.

Honey in badly stained or mildewed sections.

Honey showing signs of granulation.

Leaking, injured or patched up sections.

Sections containing honey-dew.

Sections with more than 50 uncapped cells or a less number of empty cells.

Sections weighing less than the minimum weight.

All of such honey should be disposed of in the home market.

EXTRACTED HONEY

Must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained and packed in new cans, 60 pounds shall be packed in each 5 gallon can, and the top of each 5-gallon can shall be stamped or labeled, "Net weight not less than 60 pounds."

Extracted honey is classed as white, light amber and amber, the letters "W," "L. A.," "A." should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new, substantial cases of proper size.

STRAINED HONEY

Must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained, and if packed in 5-gallon cans each can shall contain 60 pounds. The top of each 5-gallon can shall be stamped or labeled "Net weight not less than 60 pounds." Bright clean cans that previously contained honey may be used for strained honey.

HONEY NOT PERMITTED IN SHIPPING GRADES.

Extracted honey packed in second-hand cans.

Unripe or fermenting honey, weighing less than 12 pounds per gallon.

Honey contaminated by excessive use of smoke.

Honey contaminated by honey-dew.

Honey not properly strained

Connecticut Meeting.—The 24th annual meeting of the Connecticut Beekeepers' Association will be held in the old Supreme Court Room at Hartford, April 17. Sessions 10:30 a.m. and 1:30 p.m.

Some of the subjects discussed will be as follows: "Beekeeping on the Farm 50 Years Ago," by Dr. T. L. Scranton. Dr. Scranton is our oldest member, and has kept bees for more than 60 years. His address promises to be very interesting.

"Bulk Comb Honey"—"Best Way to Secure It in Connecticut"—"Best Way to Strain It"—"Best Way to Market It," by Allen Latham.

"Some things I Have Learned in Keeping Bees," by Geo. H. Yale. Mr. Yale was the third president of our association, and his experience covers a long term of years.

"How I Cure Foulbrood and Dr. Miller's Method," by A. W. Yates.

Question box if time permits.

An invitation is extended to all beekeepers to attend this meeting. Ladies will be especially welcomed.

L. Wayne Adams, *Sec.*
15 Warner St., Hartford, Conn.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Too Much Division

1. If I buy five or ten hives of good strong bees early this spring, and if, when the soft maple begins to bloom, I raise each hive-body and put a hive-body with frames and starters under each, will the queen lay in both and fill both with brood?

2. And if, when the fruit trees begin to bloom, I place another hive-body with frames and starters, with a queen-excluder above the second hive, will the bees put what honey they make in the upper hive-body, so that I can use it to feed the bees if I need it?

3. And if, when the fruit bloom is at its best, I fix the bottom-boards for new stands and place the middle hive-body from each stand of three, on the new stand with all the bees that are in this hive, and the hive with the comb honey in the lower hive-body on the old stand, can I expect the hive which has no queen to start queen-cells?

4. And if one hive has a better queen than the others, can I cut out the queen-cells in the other hives and use the better queen-cells as far as they will go, and get the increase with better bees?

5. And if these bees build up well can I increase again in the same way just before and while clover is in bloom?

6. And if I do all this will I see anything but trouble? Connecticut.

1. When soft maples begin to bloom is the time usually counted on to bring the bees out of the cellar. Some of the colonies may be ready for the lower story immediately, but you can hardly count on their going into the lower story quite so early, as they will not go down until the hive-body is well filled with brood. If the weather is mild no harm will be done by adding the lower hive-body, and letting the queen go down when she gets ready.

2. I am afraid you are expecting too much. If both of the hive-bodies they already have are filled with honey and brood, then they would put their surplus honey above. But the bees use a great deal of honey in spring for raising brood, so you can hardly expect them to fill two stories by fruit bloom, especially if you use only starters in the lower story. They will be doing very well if they are filled by clover harvest. Putting an empty hive-body above is a different thing from putting one below, as the heat rises, and all that extra space must be kept warm. Better be sure that both lower hive bodies are full before adding the third.

3. It is a possible thing that a very strong colony might have two stories filled with brood in fruit bloom, in which case your scheme would be all right. More likely, however, you will find that some of your colonies have not yet filled one story, and until at least that happens it will be better not to divide. The queenless part will start queen-cells if it has young brood. If the story left on the old stand is well filled with brood and contains the old queen it may swarm.

4. Yes.

5. Certainly. But, alas, that "and if." You can divide again *when* the colo-

nies are strong enough for division, but it is not likely to be just before clover bloom.

6. Yes, you will see more than trouble. If you divide when fruit bloom is at its best, and then again just before white clover, you will have some valuable experience. If you tone down your expectations a little, and divide only when strength of colony allows it, you will probably have satisfactory results.

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Transferring—Buying Queens

1. I own one colony of bees. I hived it last June in a sugar keg. When should I transfer it to a patent hive? I have just bought five colonies from a neighbor, and am going to move them in a few days. They are in old-fashioned square hives about 4 feet high. When should I transfer these?

2. Do you think I shall get a swarm from each of these six hives?

3. When is the proper time to take honey? I live in Tidewater, Va., 50 miles west of Norfolk. Is a hive robbed more than once during the season?

4. Would you advise that I buy a new queen now or wait until I have had some experience with bees? If you advise, where can I get a queen? Would it be best to get it from the North or South? VIRGINIA.

1. You can transfer all in fruit bloom. Perhaps, however, the better way would be to wait until the colonies swarm when the swarm can be hived and placed on the old stand, and the old colony placed close beside it. A week later move the old colony to a new stand 6 feet or more away. Two weeks later still, or three weeks from the time of swarming, when all the worker brood in the old hive will be hatched out, break up the old hive, adding the bees to the swarm, and melting up the old combs. Instead of giving the bees to the swarm and melting the combs you can transfer at this time to a new hive. Although there is not much danger of losing their queen, as a precaution, you might give them a frame containing eggs and young brood from the swarm.

If you are anxious for increase another plan may suit you better. When the colony swarms, hive it in your new hive and put it on a new stand. In something like eight days the old colony will likely swarm again, and this swarm can be put on a new stand. Then at the end of three weeks from the first swarm, transfer what is left in the old hive.

2. Yes, if they are strong and the season is good. But if you transfer in fruit bloom they will not be so certain to swarm.

3. If you are working for section honey the sections can be taken off as soon as all but the corner sections are finished. If working for extracted honey, the combs can be extracted as soon as filled and sealed; or you may wait until the harvest is over and extract all. You will see that except in this last case the honey may be harvested as often as ready.

4. If your bees are of good Italian stock no need of requeening; otherwise as soon as the weather permits get a new queen. You can order from any who advertise in this journal whether North or South.

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Queer Tricks of Queens

In the British Bee Journal, D. Wilson tells about being called upon to hive a large swarm which had settled on the stump of a tree on the station embankment. He says:

"In such a public place it was not long before I had a crowd of spectators. One lady with her little boy scaled the embankment to have a better view, and for her safety I lent her a veil. The conversation ran something like this:

"'Is there a queen in the swarm? I should like to see one.'

"'Yes,' I replied, 'and if I see her I will show her to you.'

"A few minutes later the lady exclaimed, 'Oh! there's a bee on my veil.' I asked her to keep quiet and I would remove it. It was now nearly dusk, and with scarcely another glance I took hold of this bee and tossed it into the air. Just as it left my fingers I recognized that it was the queen I had so served. I called to a friend who was near to keep an eye on the bee, and we saw it alight on the boy's head. From there it was removed (carefully this time) and returned to the swarm, half of which was now in the skep.

"This incident, Mr. Editor, would be discounted as impossible if it were included in an article of fiction, but it is the bare truth."

An experienced beekeeper can readily believe that a queen-bee with whole wings can be found almost anywhere that her fancy leads her. Why not? When out with a swarm why should she not go wherever a worker can go? The performances of clipped queens, however, are not always so easy to understand. A number of times the writer has found a clipped queen in places where she was least expected.

Once while looking for the queen in front of the hive while the swarm was out, I was suddenly surprised to find my hat was growing heavy. In some way the queen had found her way to my hat, and the entire returning swarm had settled there. Again, she has been found on my apron, sleeves, etc., while I was at work at the hive. Just how she came there was a problem, and a bigger problem to find out where she belonged, for it was by no means sure that she belonged to the hive I was working at when she was discovered. Indeed, she has often been found to belong to a colony some distance away, and after I had been through some half dozen other colonies. Sometimes I have been obliged to cage the queen until I found out where she did belong. I have learned to be careful when setting down a frame of brood covered with bees to place it in such a position that it will not come in contact with any clothing, as I have a suspicion that the queens sometimes crawl off the frames, and that explains why they are sometimes missing.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Garfield County Beekeepers Organize

The beekeepers of Grand Valley in Garfield county, Colo., organized at Rifle in February and elected C. B. Coffin president, J. H. Gardner vice-president, and Robert E. Foster secretary-treasurer. There are quite a large number of beekeepers in the county, and the association starts out with good prospects of life and usefulness.

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The National

In the March number of the American Bee Journal it is reported that the Colorado Honey Producers' Association looked after the entertainment of the visitors at the National convention in Denver and furnished the banquet. I do not want to detract in any way from the work done by the Colorado Honey Producers' Association, as we all did our best, but the entertainment features and arrangements were made by the Local Committee appointed by Dr. Gates, which was comprised of the officers of the Colorado State Beekeepers' Association. This committee raised over $85 besides securing a $40 contribution from the Convention League. The Colorado Honey Producers' Association furnished the banquet and looked after their exhibits while the Local Committee furnished the custodian for exhibits.

About 40 beekeepers contributed individually to the entertainment fund, and credit should be given to all.

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Hulled and Unhulled Sweet Clover Seed

There is considerable misinformation regarding the germination characteristics of unhulled and hulled white sweet clover seed. The farm papers have it mixed up themselves and they are responsible, partly. First, the seed coat of white sweet clover is very hard and so impervious to water that but a comparatively low percentage of the seed germinates the first year unless the seed coat is softened by the use of an acid solution (This process is explained in the Government bulletin on sweet clover), or the seed is sown in the fall and allowed to lie in the ground all winter.

The seed coat of sweet clover seed is *not* the hull. This is where the misinformation comes in. Unhulled seed will germinate more readily than the hulled, for the hull soaks up and holds large quantities of water right against the coat of the seed, and the freezing and thawing of this water will sooner or later disintegrate the seed coat.

Another thing, hulled or unhulled seed that is harvested when seed is slightly greenish in color has a softer seed coat and will show a very high percentage of germination.

New seed sown on damp or wet soil within a week or two after seed is harvested will nearly all germinate. But hold this seed all winter and sow in the spring and not over 25 percent of the seed may germinate. Hold this same seed several years and the germination improves again, probably because the hardened seed coat softens with age.

[Mr. Foster is correct in regard to the hard coat of sweet clover. Numerous samples tested at Agricultural Experiment Stations show that the average sweet clover seed is so hard and impervious to water that only about 40 to 50 percent will germinate the first year. The process of soaking it in sulphuric acid, to remove the hard coat, is successful, but the majority of farmers will not use it on account of the care required in handling the acid.

A machine has recently been invented to scratch or "scarify" the seed so that moisture can penetrate this coat. We have been fortunate enough to secure one of these machines, and in numerous tests have found that this scarified seed germinates as high as 90 to 98 percent. Eight to 10 pounds, or even less, of this scarified seed will sow an acre and secure a good stand. Ordinary seed which has not been treated requires 15 to 20 pounds of the hulled or 20 to 25 pounds of the unhulled to insure a good stand the first season. With good hulled seed selling at $24 to $25 per hundred weight and unhulled at $16 to $18, the saving is worth while.

The increased germination caused by this scarifying will so encourage farmers to grow sweet clover that we predict a steady source of honey for the beekeepers throughout the country. The scarifying applies to the hulled seed only, as the hull must be removed before it is treated.—Editor.]

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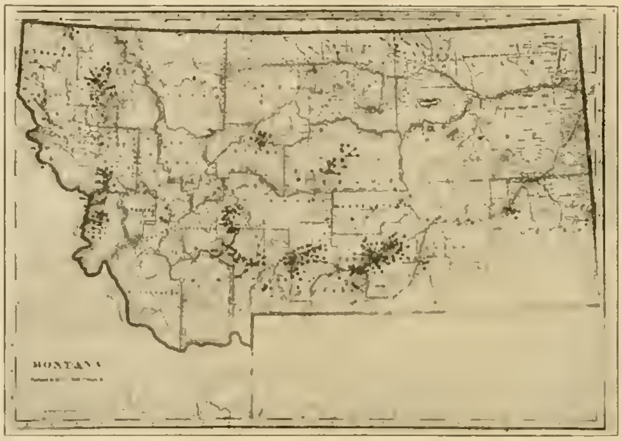
Montana—A Developing Honey-Producing State

Prof. R. A. Cooley, State Entomologist and Professor of Entomology at the Montana Agricultural College, Bozeman, Mont., has a map of the State into which he has inserted a large number of black-headed pins, each pin representing the location of a beekeeper. There are close to 300 pins already inserted in the map, and if bee-culture develops as it did in the past few years, the supply of pins may run short.



BLACK DOTS SHOW THE DISTRIBUTION OF BEEKEEPERS IN MONTANA

There are as yet not more thanl 5,000 colonies of bees in the State, but the number is growing. There are some limits to beekeeping in Montana; namely, the valleys are as a rule narrow and the winters are more severe than in the States of Idaho, Utah, Colorado, Nevada, etc.

Almost all of the bees are wintered on the summer stands, although some of the beekeepers are giving protection. Some are trying cellar wintering.

Montana beekeepers have organized and now have an enthusiastic association. Dr. Copenhafer, of Helena, is president, and Percy Kolb, of Billings, is secretary-treasurer. All Montana beekeepers should send their dues to Mr. Kolb and help Montana beekeeping to build up well and strong.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Early Feeding for Stimulation

In April many will wish to feed up colonies, particularly weak ones, in the hope that the bees will build up more rapidly. There may be some cases (rare ones in my opinion) when early spring feeding pays, but if your colonies have abundance of food in the hives, are well protected and otherwise in a normal condition, my advice is to leave them alone until fruit bloom. This is for beginners; older beekeepers have their own ideas and can and will do as they think best. I do not believe that it pays to feed bees sugar syrup in early spring unless it is to avoid starvation, then I regard it a necessary evil.

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European Foulbrood and Carniolans

Mr. Elwood's experience is interesting and valuable, coming from not only an extensive beekeeper, but one of our most successful. I am glad that he gives the Carniolans a boost. If I were sure of their being as resistant to European foulbrood as Mr. Elwood infers, I would be slow in forsaking my first love for them in favor of Italians. The latter have their good points, and so have the Carniolans, while both likewise have failings. Averaging them up, in my experience the grey bees score the most "points." The fact that Italians have been almost universally boosted as being best to resist European foulbrood has been my only reason for deciding to get rid of Carniolans and keep all Italians.

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Picture Explanation

A word of explanation regarding that picture of one of my apiaries, shown on page 86 of the March American Bee Journal. Those are winter cases piled two deep that appear in the foreground. The apiary is large, over 250 colonies, and the hives can be seen in the distance as well as to the right and left in the picture. Owing to bees all around the yard it is difficult to get a view that will take in more than half of the apiary.

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Big Losses Expected

Unless the last of March should be out of the ordinary, the past winter will go on record in Ontario as being the most pleasant in the memory of almost everybody. December was cold, much the coldest month of the winter, but since then we have had moderate weather with bright sunshine nearly every day; have had continuous sleighing since early December, and at this date (March 12) some wheels are going on the road for the first time.

Contrary to what might be expected after such a favorable winter, the loss in bees here, in York county, will be the heaviest in years. Colonies seemed to hold together nicely until March 1, but since then many have broken clus-

PERCY KOLB, OF BILLINGS, AND S. F. LAWRENCE, OF HARDIN, MONT.
The former is Secretary, the latter, member of Executive Committee of the Montana Ass'n.

ter and are going to perish before spring—many are nearly gone already. Today I examined two or three of these colonies that are in uproar, and as I expected, found combs of honey granulated solid and the bees chewing off the cappings trying to use the granulated stuff for food. I was afraid of this last fall and fed many colonies that had enough weight without any extra feeding, hoping that the syrup would tide them over until spring. In some cases the bees have eaten near enough to the top of the frames to get at this poor stuff, and they are now showing the effects in an unmistakable manner. If a cleansing flight had come sooner, things might have been better, but I doubt if it would have helped a great deal, as poor stores will "do the trick" even if bees have an occasional flight, if the weather is severe between flights. As to the bees in the north yard wintering on aster honey, I have not yet been there.

I cannot say how conditions in Ontario will be generally, but I venture the guess that the loss will be the heaviest in years. This is a natural sequence, following a failure of the honey crop, especially when poor stores are in the hives for winter.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Honey Producing Sections of Southern California

All southern California is good for honey production. Of seven of the most southern counties, San Diego, San Bernardino, Riverside, Orange, Los Angeles, Ventura and Santa Barbara, the native nectar-producing flora is substantially the same. These are the sages, sumac, wild buckwheat, wild alfalfa, etc. These plants cover the foothill and mountain region of all these counties.

In the large cultivated valleys come fruit bloom of various sorts, especially the orange blossom which furnishes a good yield. Also in several counties such as Ventura and Orange, lima bean bloom gives a good supply.

Imperial county, as Mr. Wagner tells us, is almost exclusively alfalfa bloom for a honey yield.

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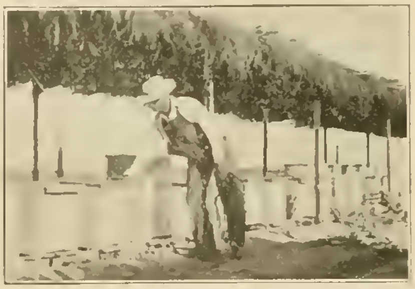
Beekeeping in Imperial County

We present this month a sketch from Imperial county by Mr. A. F. Wagner, the inspector of that county. Imperial valley is a unique spot both in its peculiar conditions and for the quality and enterprise of the people who have made it what it is. Mr. Wagner gives us the salient features in regard to beekeeping. We would only add for the more general reader that it is several hundred feet below sea level, has but about 3 inches of annual rainfall, and that from the crude but rich elements found there the inhabitants have built cities and towns of richness and beauty. Their fields grow almost all known crops in the greatest abundance. It is surrounded by the weird but beautifully fascinating scenery of the Colorado desert. Here is the home of the noted novelist, Harold Bell Wright, whose most successful book, "Barbara Worth," is the story of the early reclamation work.



AN APIARY COVERED WITH ARROW WEED

"Imperial county is located in the southeastern portion of California, and is perhaps the only county in the State where crops are entirely dependent on irrigation. Here all the water is taken from the Colorado river, nearly 500,000 acres being irrigated from this source. The country was a desert; the soil is silt deposited by the overflow of the Colorado. You may go for 30 miles east and west, or 60 north and south and not find a single pebble unless it were one that had been brought by some one.

"The honey producing plant is alfalfa. While some honey is produced from cantaloupe and watermelon blossoms and from cotton, the main crop is alfalfa.

"The first bees were brought into this county in 1905. by wagons from the mountains east of San Diego. The county now contains 20,000 colonies. The product is practically all extracted honey, and the average crop is something near 100 to 200 pounds per colony. The actual surplus honey-flow lasts only about 60 days, although the climate is extremely warm and the colonies contain brood perhaps at all times of the year. All the yards are shaded. Almost all of the sheds are long enough

A. F. WAGNER IN FRONT OF HIS APIARY

to cover from 100 to 200 colonies. They are built by placing two rows of posts parallel with a cross beam at the top, and over this seven or eight wires are stretched lengthwise, making the width about 10 or 12 feet. These wires are covered with arrow weed, a peculiar brush that grows on all overflow land to the height of 5 or 6 feet, perfectly straight, and contains thick leaves which make it ideal for shade.

"The honey is generally light amber, some seasons very light, other seasons darker. It compares favorably in color with the light amber honey produced in the coast counties. It is very mild in flavor, and must not be confounded with the dark strong honey produced in other parts of the State from alfalfa. In the early days, before the reclamation of the land, some honey was produced from wild hollyhock and another plant or shrub called 'grease brush,' which was very dark and with a strong flavor. With the reclaiming of the desert this has entirely disappeared.

"With the formation of the county the Board of Supervisors saw the necessity of the protection of the bee industry. We have always had an inspector of apiaries, and the consequences are that the county is practically free of brood diseases. All bees are kept in standard movable frame hives. Several years ago to further safeguard the industry, the supervisors adopted an ordinance then in force in several other counties in southern California for the prevention of the shipment of bees from districts or counties where disease was known to exist, giving the inspector power to declare a quarantine if necessary. The danger of importing brood disease has practically been eliminated.

"Generally speaking, the crops are not very large, but the certainty of crops appeals to a person more than one year of large crops with an almost entire failure other years. Again it is perhaps more expensive to maintain an apiary in this county, owing to the fact that there is practically no waste land where apiaries can be located and rents are from $20 to $50 for each location. Also all colonies are assessed at $2.00 each. The Bard district in this county produces some mesquite honey which is of very good quality.

"A. F. WAGNER."

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Failures

If success lay in the path of every one who entered beekeeping, ours would soon be a crowded business. Removing and marketing honey is where many fail. Much of our honey granulates or candies. It should not be removed until the market is ready for it; then remove it, pack it, and ship it at once, and it will be consumed before it granulates and causes trouble, for the longer it is removed from the bees, the less fit it is for the market. This applies only to chunk and extracted honey. Comb honey in one-pound sections should be removed and packed as soon as finished. We have warm weather suitable for removing and packing honey during the winter months.

At this time (March 10) we have lots of colonies with almost their entire last season's crop still on. The honey is as good as, if not better than it ever was. The market has not been ready for it, and when it is it will be removed, and not before, even if some is left to go on in the new crop. This is better in two ways, for the bees are in the very best shape under these supers of honey.

Beekeeping in Florida

Owing to the climate and possibilities of development in Dixie, much has been said concerning it as a bee and honey country. As a rule, opinions of it are far from right. Bees gather little or no honey through the months of December, January and February, for even this climatically favored country has its seasons when natural vegetation rests. Trees and almost all kinds of forest plants stop growing and shed their leaves. Naturally the bees rest also.

Vegetables of almost all kinds grow and flourish wonderfully during this time, and cultivated trees such as the citrus fruits also grow if fertilized, etc., but they do not bloom until the regular blooming period comes. Of course, as the spring opens so does beekeeping, which makes the season earlier than in the central and northern part of our country, and naturally it closes later. Then, too, the sources of honey vary.

Our industry has put on a great growth here of late, since we have come down to more reasonable expectations and have risen higher in the knowledge of our business.

The Caucasian Bee

Editor Root of Gleanings in Bee Culture, under editorials for March 1, has this to say about Caucasians: "The question whether or not they swarm to excess should not be given too much consideration. The real question after all is, are they money makers?" This is the question in a nut shell. But are they? I will answer "yes, so far as they have been adopted." There have been some few limited experiments that would not substantiate me in this.

While many beekeepers have made a great success since they adopted the Italian bees, there have been many miserable failures also with them. With me the Italians would not breed up, and the old bees carried over from the previous season rapidly disappeared, and colonies were greatly reduced in strength. In this condition they consumed stores at a time when they should have been making a living.

The Caucasians were gaining in strength every day when the Italians were barely holding their own. When the main flow came they built up some and stored a little honey in the brood-chamber, but long before the next flow they were again reduced in numbers. On the other hand, the Caucasian predominated, multiplying fast in number of colonies by artificial increase, and at the same time producing large crops of honey each season, which gave my business a good backing and kept it

J. J. WILDER AT HIS WINTER HOME IN BRADENTOWN, FLA.

going, when I would otherwise have failed.

In the most favored locations in Florida I have hundreds of colonies of pure Italian bees, but I am frank to admit they have never given me such returns as do Caucasians, and general results are very unsatisfactory, and as early as possible we will replace them with Caucasians. It takes an expert apiarist to care for 200 colonies of Italian bees, feeding them and building up. But one man can take care of 600 colonies of Caucasian bees, for they are strong and heavy, and stay together during the harvest.

NOTES FROM ABROAD

By C. P. Dadant.

Ancona, a seaport on the Adriatic, is one of the oldest cities of Italy, having been founded some 400 years before the Christian era. It is located in a pretty valley as well as on the hills on both sides. The old part of the city is on a very steep hillside, with narrow streets, paved with cobblestones. But the modern part is very pretty, and the streets are wide. The vicinity is beautiful; there are so many fine residences, and the country is so well cultivated that it seems a fairy land

Our first visit was to the offices of the Italian Apiarian Federation, of which our young friend Mr. Cotini is manager. So we will give you an introduction into this organization.

The federation was established in 1904 with 72 members. Its purpose was to handle and sell the honey of the beekeepers. For a few years its shares of stock were of only $2.00 each. In 1909 they increased the stock price to $10, payable $1.00 each year. They had, at the end of the year 1913, 590 members, and handled $682,000 worth of honey. They have large producers among their members. One of those whom I met was said to own over 1000 colonies of bees. This is a very large number for a country as thickly populated as Italy. They supply their members with tin boxes similar to our 60-pound cans, but holding 50 kilos or 110 pounds each. The cost of these packages is a trifle over 3 francs, or 60 cents each. Some honey is exported into Germany, Belgium, France, Austria and Switzerland.

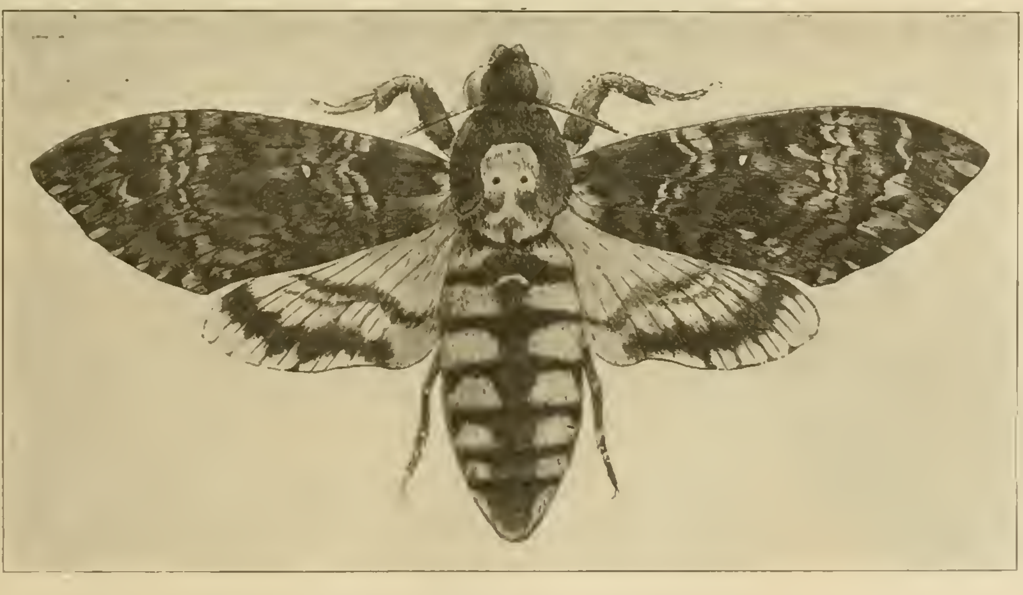
This association publishes a magazine or "bulletin," entitled "L'Apicoltura Italiana," with an experienced apiarist at its head, Dr. Colantoni. The main styles of movable frame hives used by the members are the "Marchigiana," a deep frame hive, and the Dadant. As in the other countries visited by us, extracted honey is the principal crop.

After a short meeting of beekeepers, we gathered into the small public park and a photograph of those present was taken. Then came a banquet at our hotel. After the banquet automobiles were brought forward for a visit to beekeepers. Dr. Colantoni, the editor of the journal, has his home and apiary some 7 or 8 miles in the country. It was a beautiful ride, among olive trees, fig trees, and other warm country products. The sainfoin is here also, one of the principal honey resources.

At Dr. Colantoni's we met more beekeepers. But most of them spoke only Italian, and though I made strenuous efforts to understand them, I succeeded little. They spoke so fast! Wife had been kindly provided with an interpreter and cicerone, Mrs. Bazzano, a lady who spoke French and English, as well as Italian, and who volunteered to stay with her during the entire day. She very kindly accompanied us wherever we went.

Prof. Attilio Cotini.
Manager of the Beekeepers' Federation

One of the apiarists assured me that the famous May disease (paralysis) was present in his vicinity most of the time, and that he had some instances of it in his apiary at that time, Sept. 12. We looked among Dr. Colantoni's bees, and found a few apparently crippled in front of the hives. He asserted that these were diseased. Yet they had none of the usual symptoms, distended abdomen and hairless appearance. Here as elsewhere, the May disease was charged to inferior or moldy pollen, though a few believed it due to



THE DEATH'S-HEAD MOTH—(Actual size)

Ancona Panorama visto dalla Cattedrale
Posatore

LOCATION OF THE COTINI APIARY NEAR ANCONA

COTINI APIARY WHERE I FOUND THE DEATH'S-HEAD MOTH

certain kinds of blossoms. This cannot be the case, since it exists in all sorts of countries with entirely different flora.

The homes of well-to-do country people are scattered on the hill tops and make beautiful sights, as most of them are real castles. On our return from the Colantoni home we stopped at the country place of Dr. Marchetti, one of the leading beekeepers. I have never seen a more delightful country place; hidden among the trees, well shaded and surrounded with blooming gardens.

Later we visited the apiary of Mr. Cotini, at his summer home. This is on the bluff overlooking the Adriatic, and in full view of the city. They had extracted the honey a few days before, but the crop was on again, and considable fresh honey showed in the supers. Here I saw an insect I had never yet seen, the death's-head moth (*Acherontia atropos* or *Sphinx atropos*), which many European writers mention as making great depredations in hives of bees. This one was dead, inside of the entrance of a colony. I noticed it as I walked in front of the hives and became so eager to get it that I forgot my usual prudence. I picked up a little stick and poked into the entrance to secure the moth. I did secure it, but angered the bees and got several stings for the first time since my arrival in Italy. Unluckily it had been so badly damaged by the bees in their efforts to get rid of its carcass that it was of little value for a picture. So I offer our readers the copy of a woodcut borrowed from the ancient work of Hamet, giving the moth at its natural size.

Until then, I could hardly believe that death's-head moths would be brave enough to enter a hive of bees to feed on its honey. But this was evidence which I could not gainsay. It appears that this moth fears the stings but little, and enters weak colonies to gorge upon their stores. Hamet says they can take as much as 60 gramms (2 ounces); rather an overdose! This one had entered at some point where the entrance was high and had evidently been unable to find the same spot to escape in time to avoid the angry bees. Some writers claim that the bees reduce the entrances of their hives with propolis, when they are too large, in fear of this moth. We did not notice any such work. But I do believe that the bees reduce an entrance whenever it is located where it gives too much ventilation, above the brood-chamber for instance.

Dr. Cesare Colantoni,
Editor of L'Apicoltura Italiana

They do this in all countries, moth or no moth. The death's-head moth is one of the largest moths known. The Dictionnaire Larousse describes its largest specimens as measuring 13 centimeters (5 inches), across the wings, from tip to tip. So the cut we reproduce is not too large. Its larva feeds on potato vines, cow peas, lettuce, etc. The moth itself was credited, even by educated people and priests, in the middle ages, with deadly power. This was due to the death's-head picture so conspicuous on its corslet. It exists mainly in southern Europe and Africa. It is unknown in the United States.

To complete the information which I have secured concerning this extraordinary insect let me quote a passage from L'Apicoltore of March last. Discussing a statement made in Gleanings in Bee Culture regarding cats which were accused of eating bees, the editor wrote:

"In our apiary the cats give an active chase to the death's-head moths who are in the habit of entering the hives to steal honey from them at night, These are stupid and slow moving insects which allow themselves to be readily caught."

From the Cotini country home, we had a very fine view of Ancona and the bay. We also visited the home of his tenant, an Italian "contadino." It was comfortable but exceedingly rustic.

On the second day, we had dinner at the home of Mr. Cotini, in company with himself, his beautiful young wife, her younger sister, and Mrs. Bazzano, already mentioned. We were so kindly received that we will never forget the hospitality displayed.

Later we began a search for the

cousins of my wife and the old home of her father. He was born there in 1814, or 101 years ago, went to Paris in 1832, was married there and came to America in 1847. Our friends had not been idle, and they had gathered sufficient information to at once find two remaining relatives, married ladies with families, who greeted us heartily. The family birthplace, we were informed, was at the upper edge of the cliff, in the old part of the city. A carriage was secured and we began ascending tortuous, narrow streets, paved with cobblestones. The old stone houses with their narrow, grated, iron-framed windows, looked more like dilapidated jails than homes. Yet the stirring, ragged urchins which filled these openings, or sat on the stone steps, gave an idea of intense life.

This was so unlike our own country that my wife was greatly moved, in the expectancy of finding her father's birthplace in such ugly surroundings. But we were pleasantly surprised, for the house, though small, proved to be airy and beautifully located at the top of the hill, with a fine view of the city and the bay. From this point we could see the port, the sea baths and the Trajan arch (Arco Trajano), erected in the year 115, in commemoration of the mole or jetty built by this emperor, and still in use. The arch is of marble and well preserved.

In this old city, as elsewhere in Italy, the children are numerous and happy, the men handsome, the women pretty. Almost all of them have black eyes, heavy black or auburn hair, and amber velvety skin, due to the warm sun of a country where frosts are almost unknown.

On the morning of Sept. 13, we took leave of our kind friends, to continue our trip, henceforth turning our faces towards the setting sun and slowly decreasing the distance between us and our home.

Since writing the foregoing, I have found, in the 1885 volume of the "Revue Internationale," the mention of finding, at Bex, Switzerland, 14 death-head moths gorged with honey, in a hive which had been abandoned by the bees. In the same article is found a letter from Francois Burnens, the famous helper of Huber, to his master on this subject.

CONVENTION PROCEEDINGS

Glimpses of the National Meeting at Denver

The Denver meeting was very successful in many ways. The delegates from the East were given a glimpse of western beekeeping, and can better appreciate the view point of the beemen of the mountain country.

Living in the mountains has, perhaps, given these westerners a large horizon, and they deal with problems of honey production in a large way. They number their colonies by hundreds and even by thousands, and count their production by tons and carloads. It is not to be wondered at, if they get the idea that those of us further East who have but a hundred or two colonies and produce but a few thousand pounds of honey are amateurs.

However, they are big hearted fellows and did everything possible to make our stay pleasant. Automobile trips to the mountains and to the various apiaries within reach were among the most interesting features. The writer had the pleasure of being a member of one of the parties to enjoy a trip with Mr. Herman Rauchfuss to one of his apiaries, and following that, a ride to Morrison, and a most wonderful trip of 15 miles into the mountains along a very pretty little stream that seemed to persist in running uphill. Nothing seems just right to a man from the East. The high altitude and the clear atmosphere upset all his calculations. A mountain that looks to be but a few miles distant, he is assured is 50 or maybe a hundred miles away. At times the irrigating ditches and even the streams seem to be running upgrade, and he cannot figure out how it is that his eyes deceive him so.

One afternoon the National adjourned to give the Colorado beekeepers an opportunity to hold a business session, and the whole bunch of visitors went to Golden and to the top of Lookout mountain. While it was a wonderful trip, we were in the hands of an excursion company who apparently had no thought except to get us back as quickly as possible. Little opportunity was offered to enjoy particularly interesting scenery. The winding ride up the narrow mountain road where a single careless turn on the part of the driver would dash the whole party hundreds of feet down the slope, together with the fascinating views of peak and gulch, gave a variety of sensations to the tenderfoot from the East. When the descent began, several of the visitors felt strange sensations in the back of the neck and the

FRONT OF THE COLORADO HONEY PRODUCERS' ASSOCIATION STORE DURING "NATIONAL" WEEK

DENVER, COLO.

3. M. McCombs. 4. J. D. Atkinson. 5. Grover Matthews. 6. L. Steel. 7. D. B. Hersperger. 9. J. B. Brunstein. 10. J. P. Molhalm. 12. Mrs. J. Cornelius. 13. A. G. Woodman. 14. J. Cornelius. 15. D. H. Hillman. 16. L. C. Elliott. 17. Prof. Jager. 18. F. E. Millen. 20. M. Stoneman. 21. W. C. Evans. 22. Mr. Watson. 23. A. A. Lyons. 24. J. N. Pease. 25. Mr. Stuart. 26. J. A. Everett. 27. J. C. Bull. 29. H. C. Dadant. 30. F. G. Rauchfuss. 32. Mr. Sellers. 33. Mr. Stark. 34. R. C. Clary. 35. Mr. Brown. 36. H. Lathrop. 37. Mr. Sanders. 38. C. P. Wallick. 39. P. W. Ritter. 40. C. Noll. 41. P. Kolb. 43. A. Richardson. 44. C. Stimson. 45. W. H. Bartleson. 46. J. W. Hackney. 47. A. J. McCarty. 48. Mrs. McCarty. 50. Little Miss Foster. 51. Mrs. Foster. 52. Mrs. Cochran. 53. Clare Raucbfuss. 55. Mrs O. Foster. 57. D. Moon. 58. Mrs. M. Booth. 59. Mr. Peabody. 60. G. Bohrer. 61. G. W. Williams. 62. Frank C. Pellett. 63. Wesley Foster. 64. Frank Rauchfuss. 65. Geo. Miller. 66. H. Rauchfuss. 67. F. Wich. 68. D. C. Polhemus. 69. J. E. Walcher. 70. A. Elliott. 71. J. E. Miller. 72. M. Cantonwine. 73. W. N. Birney. 74. Chas. Cheek. 75. F. Wilson. 76. H. Ingalls. 77. C. Bentrup. 78. J. B. McKinstry. 79. H. G. Rauchfuss. 80. W. T. Brand. 81. Stimson. Jr., 82. E. C. Herrington. 83. Polhemus. Jr., 84. Geo. Nichols. 86. H. Whitacre. 87. E. R Root. 88. B. N. Gates. 89. W. P. Collins. 90. Ward Foster. 91. H. Eggleson. 92. J. C. Aikin.

pit of the stomach. Most of the party who were not accustomed to mountain climbing breathed much easier when they were safely back again on the trolley, bound for Denver.

After the close of the convention a number of the delegates bought tickets home over the Rock Island, via Colorado Springs. The party arrived in the Springs a little before noon, and spent the afternoon in an automobile trip to the Cave of the Winds, the Garden of the Gods and the Seven Falls. The Garden of the Gods was a disappointment. We had already seen much finer things that we had never heard about, and the so-called garden has been heralded to the ends of the earth as a sight never to be forgotten. One soon gets the impression at Colorado Springs that the principal business is entertaining tourists. We had now left our beekeeper friends behind. Instead of being honored guests we were tourists, and at every turn we met an opportunity to part with our money. On this trip were other steep climbs and great views, but the experience at Lookout mountain had prepared us for the climb, and some of the sensations of the first trip were lacking.

Here some of the delegates left the party, returning to Denver or going home by other routes. Enough, however, remained together to hold a continuous convention until Omaha was reached, when Prof. Jager left to take another train, and a short distance beyond, the writer stopped at home.

On the whole, the most interesting of all the mountain trips was in the Rauchfuss car, when we could stop as long as we liked, drive as slowly as we liked or get out and walk as we preferred. Nor more interesting mountains did we see than those along the little trout stream above Morrison. (We had to take Mr. Rauchfuss' word for the trout.)

The banquet was a great occasion. When the orchestra played "It is a Long Way to Tipperary," the applause was fine. A little later they played "The Watch on the Rhine," and the noise was deafening. Apparently the beekeepers are neutral.

Dr. Phillips as a toastmaster rose to the occasion in grand style. The way he put some of the speakers in the hole was awful, and they say that there may be a day of reckoning if Phillips ever gets on the other end of the same string. He recited a little history by telling of the first official beekeeper of Massachusetts, who unfortunately became a town charge at the end of two years. Dr. Gates was introduced as a worthy successor.

Space forbids even brief mention of the many interesting things in connection with the convention, but the delegates left with recollections of a very pleasant journey and a feeling that the Colorado boys had given them a fine reception. **Frank C. Pellett.**

Atlantic, Iowa.

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The 1915 National

Only a small group, nine in all, of eastern men reached Denver together, in the car planned for their sole occupancy. Others, making a total of 15 from east of Colorado, had arrived previously. It was a pleasure to be met at the station by Colorado beekeepers and taken to the hotel in automobiles. There we were soon comfortably settled and found an enjoyable company of western brother beekeepers. Unlike the male inmates of the bee-hive, the drones kept busy, buzzing almost day and night during the three days' session.

Dr. E. F. Phillips quoted statistics, showing that honey is coming into the United States at the rate of about 1,500,000 pounds per month, whereas, before the outbreak of the European war, the imports totaled only that much in a year.

Mr. Frank Rauchfuss warned beekeepers not to look to the big honey markets during the coming year for the disposition of their crops to as good an advantage as normally. Every beekeeper should develop and supply his home market direct. Very few homes have honey on their table or use it in their cooking the year around. Ready sale can always be found for the best grade of honey for the table at good prices.

A new bulletin will soon be issued by the United States Department of Agriculture, "The Use of Honey in Cooking," which will contain recipes tried out. This bulletin, which is to be given wide publicity and distributed as much as possible throughout the United States, should help a great deal in developing a larger demand for honey.

"Many districts have been spoiled by poor quality honey and low prices," said Mr. John C. Bull, who made a plea for uniformity of prices and grading rules for extracted honey. Some large bottlers of honey today are putting on the market a uniform grade by blending the various grades of honey from different parts of this country. This seems to be the only practical method of placing before the public a uniform flavor of honey on which they can depend. Others believed it better to educate the public to the various flavors of honey and the reason therefore.

The greatest problem for the National Beekeepers' Association, outlined by Prof. Francis Jager, was a greater recognition of the bee and honey industry by the government and more publicity. He urged large appropriations to do the vast amount of work as yet untouched for the improvement of the races of bees, the development of locations and pastures, the honey market and the education of the beekeepers.

Migratory beekeeping, although tried on a large scale, has not always proved successful. The main causes of ill-success, mentioned by Mr. E. R. Root are: Time and distance of moving, conditions *en route*, adverse crop conditions developing after the southern fields are reached and probably most important of all the handling and attention given the bees by those put in charge, during the absence of the owner.

The weakening of colonies by death to the field-bees as a fall honey-flow advances was reasonably explained by Mr. H. Rauchfuss. The corolla of blossoms similar to the cleome of Colorado presents sharp edges which injure the bees' wings, so that they are unable, after several trips, to return to the hives, and perish in the field.

Dr. Burton N. Gates managed the chair with care and fairness, and was re-elected unanimously.

It was my pleasure to see over 300 colonies, in two apiaries of Mr. Herman Rauchfuss, wintering near Denver. To a beekeeper of the Middle States they looked as if just unpacked and ready for spring. The wintering is simple. No packing, inside or out, in that climate, a mile above sea level. We found all these hives standing in the open, in well sheltered spots almost surrounded by rising ground, but without shade trees. The inner cover or escape board is left on with the escape removed. The covers are made to telescope about 1½ inches, but do not fit tightly, thus allowing some ventilation. **H. C. Dadant.**

CONTRIBUTED ARTICLES~

The Hand Convertible Hive

BY E. F. ATWATER.

THE writer has read with interest the series of articles by Mr. Hand, giving the details of construction and manipulation of his large convertible hive.

Our experience covers operation of as many as 13 apiaries at one time, and years ago, some of these apiaries belonged to others, and were run "on shares." In these yards there were several styles of hives. One style had frames 13¾ inches square inside, and enough of them to give a brood-nest equal to 17 Langstroth frames. This yard gave the largest crop, per colony, and was always the strongest and went into winter very heavy.

The writer was, at that time, an advocate of the 8-frame hive, Langstroth or Heddon, and his experience came as quite a shock to him. About a year before this the writer contracted for the swarms from a yard of these larger hives, miles away, and here again the colonies, with no care, were stronger than in other yards having good care.

Several years ago the writer visited the big apiaries of Pennington Bros., of Oregon, and found there 80 hives each containing 13 Dadant frames. These large hives always gave large yields until paralysis and spring dwindling finally struck the apiary, when all, large and small, went down together.

It is very evident to the producer of extracted honey that few hives are too large for the bees. But for convenience of handling, and in out-apiaries, few care for hives larger than the standard 10-frame Langstroth. There can be no question with those who have tried both, that larger colonies earlier may be had in large single story hives, rather than in those of two or more stories, with their bee-spaces and top and bottom bars.

Mr. Hand's idea of using a cheap inner hive in cold weather, or an old 8-frame surrounded by packing is excellent, where packing is necessary, but here it is not needed.

At first Mr. Hand told us that his hive was 20x26 inches, but now he says 20x24, but the latter holds but 14 frames at 1½ inch spacing, and a heavy dummy. A point apparently overlooked by Mr. Hand is that if one is to use a very large hive, then by all means make it wide enough so two 8-frame hive bodies, side by side, may be used for supers, as in this way good use may be had for tens of thousands of dollars worth of equipment now in the hands of beekeepers. This is a point of almost supreme importance, as beekeepers cannot afford to discard such valuable equipment.

This would call for a hive 20x27¾ inches, or 20x28 holding 17 frames with 1½ spacing, or 18 frames 1⅜ spacing, allowing for a dummy if the latter spacing is used. Or the hive could be made a little narrower, allowing the 8-frame bodies used as supers to project ⅜ to ½ inch on each side. However, the writer has serious doubts about the 17-frame hive being a comb-honey hive, unless the brood-nest be contracted and the comb honey all produced in the super. We also find that, unless the flow is very good, the plan of alternating extracting combs and wide frames of sections is a failure in producing comb honey. Let us examine the claims originally made for this hive.

1st. A brood-chamber of a capacity to develop the fertility of queens sufficiently to check the swarming impulse and bring the colony on the stage of action with the strongest force of bees possible. True, this large hive will tend to *delay* swarming, and in some localities totally to prevent it. And certainly the hive with 16 or 17 frames, as originally described, is large enough to rear a giant force for the flow.

2d. "Spontaneous prevention of swarming." If I understand Mr. Hand's later articles it is eventually abandoned, but would hold good in many localities, though unfortunately not in this immediate vicinity,

3d. "A single-wall hive in summer and a double-wall hive in winter, affording ample winter protection without extra equipment." No question about the protection, but the inner case certainly constitutes a little extra equipment to be stored away in summer. If to be left packed until late in the spring in this locality, 13 frames would be far better than 8, but in a mild climate like this, we would not use an inner packing case, and would leave 13 frames of stores, which are usually none too much.

4th. "Horizontal expansion by means of a sliding follower." A good feature surely, though again in this locality the gradual expansion is usually confined to the building up of increase; no need of it with full colonies.

5th. "A cubical form," etc. Rather immaterial, it seems to me.

6th. "It necessitates handling the wintering combs, thereby eliminating the loose practice of guessing at internal conditions." Good point that, though the writer prefers the "loose practice" applied with moderation and an observing eye.

7. "Its advent will mark the beginning of a new era in bee-hives and methods, and sound the death knell of expensive paraphernalia for wintering bees and producing comb honey." Claim, in part, often heard before, but quite possible. I wish I had a yard or two in them.

Meridian, Idaho.

European Foulbrood Pointers

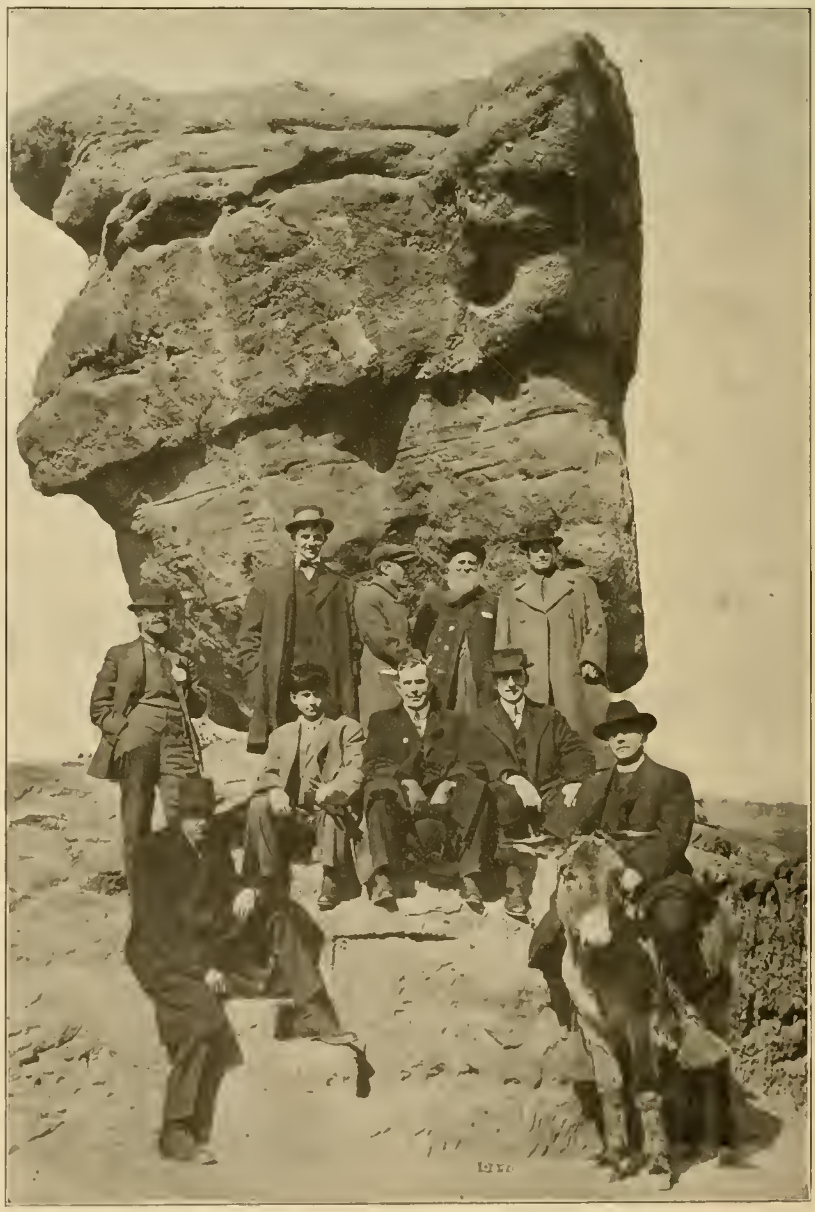
BY M. G. DADANT.

OUR experience with this disease is limited to a single year, and to a single apiary, but some points have been so thoroughly fixed in my mind that I think they may prove of value in helping others.

To begin with, we have, in recent years, not tried to have pure Italian stock in our out-yards. In fact, we had everything from a *golden* to a pure *black* colony. Our idea was primarily to breed for honey-gathering qualities regardless of race, and we succeeded in getting large crops of honey.

Thus we had in our Koch apiary last spring 90 colonies of bees ranging very much in color and, I must agree, more or less in temper. Most of these were fairly strong early in spring, and would have been in the best of shape for a honey-flow. Alas, we expected nothing, since our clover was scarce. We were not mistaken; the dry season burnt up what little clover there was, so that it was necessary to feed throughout most of the year.

Under such adverse circumstances it seems we had everything in favor of foulbrood, and everything against



TEN OF THE FIFTEEN REPRESENTATIVES AT THE NATIONAL WHOSE HOMES ARE EAST OF COLORADO
Standing left to right, H. Lathrop, A. G Woodman, F. C. Pellett, E. J. Baxter, J. C. Bell.
Seated left to right, B. N. Gates, H. C. Dadant, F. E. Millen, E. F. Phillips,
Rev. Francis Jager in the saddle

us. Some colonies, breeding earlier, had become very strong, while others, a little slower, were *middling* when the first evidences of European foulbrood made themselves apparent about April 25.

Had we been Dr. Miller, or had we immediately practiced what has been previously written, we would have proceeded to "make our European foulbrood colonies strong," but we wanted the experience, and we got it. One thing we did do, however, as fast as we could, was to requeen the whole apiary with pure Italian stock.

Rather than give a detailed account of what transpired during the season, I will give an illustration showing our method of keeping a record on colonies, then a diagram generalizing the situation for the whole apiary.

Our records are kept on the back end of our deep telescope caps in blue pencil. Under ordinary circumstances the back of one cap will hold the record for two years, when the cap is reversed. Thus, we have three or four years' record by simply observing the cap. The records are not minute; that is, we do not record every feeding, every super given, etc.

Table for the year follows. Remember that we did not usually help weak, diseased colonies with two or three frames of brood unless they were extremely weak, as most colonies were not rich in brood. We did requeen as fast as possible with Italians, thus making the table more against the hybrids and blacks than it might otherwise have been.

From our experiences so far, European foulbrood is much preferable to American foulbrood. No destroying of combs; an invigoration of stock which, I think, would be a blessing in some apiaries where poor stock is not constantly weeded out, if indeed you could give such a beekeeper credit with ability to catch the disease in time to fight it successfully.

The remarkable points in my estimation are:

1. Colonies should be made strong in order to increase their fighting strength to a maximum.

2. In ten cases, three badly diseased combs were given to *strong* colonies. They did not suffer as a consequence. (This proves the futility of destroying combs in fighting European foulbrood.)

3. Preponderance of Italian blood in those which were either untouched or cured themselves, or overcame the disease given them from another colony. (One Italian queen, after caging twice, was killed. Her colony was made strong, but she did not have the vigor needed, or probably had been injured in transit.)

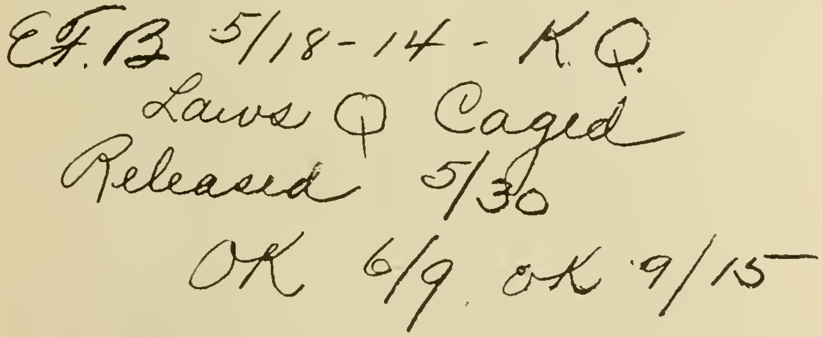
4. In three cases very prolific queens from diseased colonies were given to healthy weak colonies, either queenless or in which the poorer queen had been killed. Every one developed European foulbrood. A fourth queen from a diseased colony was carried to another apiary 20 miles distant, and immediately introduced to a queenless colony. Again the disease was transmitted.

CONCLUSIONS.

To prevent the disease, keep your colonies strong, headed by vigorous queens. Keep only pure stock, Italian preferred. (I have no reason to run down other races since we have had no experience with them recently.)

When you have the disease do not destroy the brood combs. Make your colonies strong. Cage the queen 8 to 11 days. If necessary strengthen again, and cage 8 to 11 days again. "Keeping everlastingly at it brings success."

Hamilton, Ill.



E.F.B. 5/18-14 - K.Q.
Laws ♀ Caged
Released 5/30
OK 6/9 OK 9/15

KEEPING RECORDS ON THE BACK OF TELESCOPE CAPS

		1 A. foulbrood cured by shaking.
A. J. KOCH Apiary Warsaw, Illinois 90 Colonies spring count	38 healthy	10 colonies Italians not touched.
		10 colonies given 3 frames bad E. f. b. in place of healthy showed no disease. (2 weaker, similarly treated, caught the disease—all Italians.)
		18 requeened early remained healthy.
	51 with E. foulbrood	5 Italians (slightly diseased) cured themselves.
		3 cured by requeening with Italians.
		6 cured by giving 3 frames healthy brood after caging had presumably failed.
		28 cured by caging 8 to 11 days and giving Italian queen if they had hybrid.
		3 cured by caging twice 8 to 11 days.
		3 lost by doubling (uniting).
		3 still have it (1 black).

Co-operation

BY FRANK RAUCHFUSS.

SOME time ago, wishing to show the benefits of co-operation, we asked Mr. Frank Rauchfuss, secretary of the Colorado Honey Producers' Association, to supply us with some information concerning their co-operation.

The success of co-operation depends in a great part upon its management. Mr. Rauchfuss is an excellent and devoted manager, as all who know him will testify, and if he has found hearty support it shows that his earnestness is appreciated by the beekeepers of Colorado. We believe that Colorado is showing a good example in co-operation.

He has supplied us with the following paper which he read at the National meeting:

WHY WE CO-OPERATED.

One afternoon during the latter part of August, 1896, a small bunch of Denver beekeepers met to discuss their honey crop marketing problems.

The honey business of Denver was then in the hands of the commission merchants, who naturally were only interested in buying at as low a figure as possible, and the beekeepers themselves were helping them to accomplish this with little effort in the following manner:

Some five or six beekeepers would each come in with a load of comb honey. If the market was comparatively bare the first comers might be able to secure a fair figure, but at each successive offer the buyers would be inclined to make lower bids, realizing that these producers would not care to take their loads home again and the buyers would also conclude that, if such a quantity was offered in a day, a heavy crop was being harvested; the statements of the beekeepers reporting a light crop would not be taken seriously. The impression prevailed, among the producers, that the buyers were working in harmony. Whether this suspicion was well founded or not does not matter, but it was a certainty that the beekeepers themselves had a merry war in cutting prices to get rid of their crop, irrespective of what it cost to produce. Result, the crop was often sold below cost of production. None of these commission firms were making an effort to develop a carload trade. Two reasons, and very important ones, that nobody else cared to venture into the honey shipping business extensively were, first, the lack of uniform grading, and second, the absence of a standard size of sections and standard shipping cases. No product subject to variation in weight, flavor, color, etc., can be satisfactorily placed in a distant market, unless well defined rules for grading and packing said commodity are first adopted, then strictly carried out, and most important of all, a line of customers secured who have confidence in the parties offering the goods, that the goods will come up to representation.

All of these subjects were carefully gone over by this little band of beekeepers, and the decision was that first a set of grading rules should be drawn up and later submitted to the Colorado State Beekeepers' Association for adoption; second, that those present would agree to grade by these rules; third, that as soon as possible they would all adopt the 4¼x4¼x1⅞ sections and the double-tier glass front shipping cases as their standard; fourth, to appoint a secretary to develop a carload market for their product. To start the ball rolling each of those present contributed the big sum of 25 cents for stationary and postage stamps. The writer was elected secretary, without pay, and instructed to go ahead.

A buyer for a carload was found in a comparatively short time at $2.40 per case for No. 1, and as local buyers only offered $1.75 for the same grade everybody was highly elated. The secretary made all the arrangements for the loading, and each producer hauled his honey direct to the car where it was inspected, and each one lent a hand in loading. Within a few weeks after this car had arrived at destination the same party wired for another car. As there was not enough to make a car, others were invited to come in and fill the order.

The following season a store room was rented. This was kept open one day each week during the shipping season to receive honey until carload shipments could be made. The next year steps were taken to incorporate under the laws of the State of Colorado. To comply with the statutes a stock company had to be formed. The capitalization was originally fixed at $10,000; shares of stock $10 each, to be sold to beekeepers only.

After some stock had been sold, it was decided to establish a warehouse, carry a complete stock of bee supplies and also supply the local honey market. The secretary was appointed as manager with a small salary.

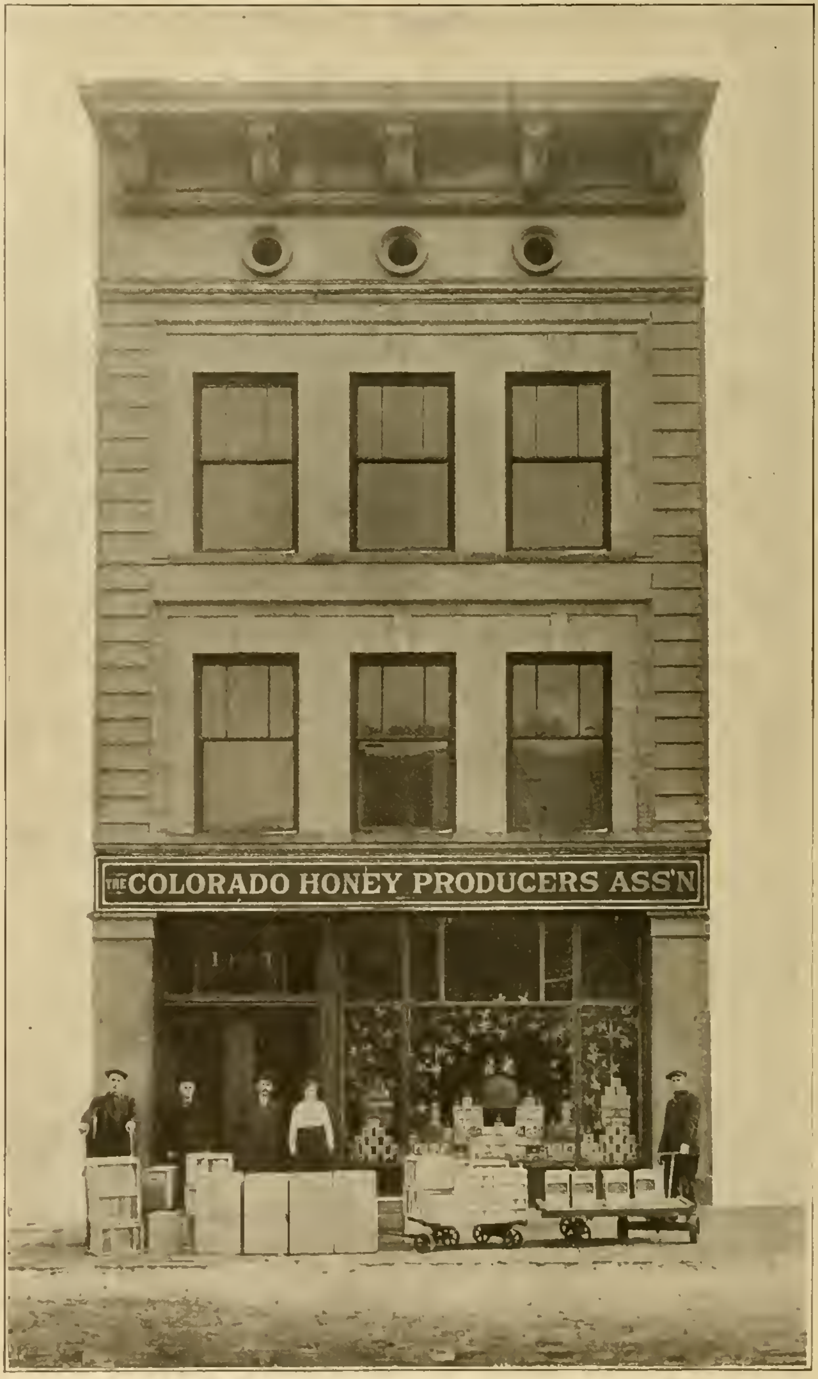
The policy was adopted of handling bee supplies of highest quality only and selling them at a small margin of profit, not only to members but to all comers, giving the small beginner the same opportunity in buying as the large specialist.

The handling of honey was done on the following basis: Honey received at the association warehouse was stored there, insurance carried on it, local sales made out of such stock, and carload shipments were filled; the association doing all the work and charging 10 percent of the selling price. Carload shipments from the outside points were handled in the following manner: Members at such points would store their honey themselves, carry insurance on it, haul it to the car to be loaded when ordered to do so and bear all expenses of loading; the manager of the association doing the inspecting of each lot at the car door and supervising the loading, such shipments being handled by the association on 5 percent of the selling price.

To identify each member's honey consignment, numbers are used to stamp on each end of a case of honey immediately above the hand hole, the mark designating the grade is made with lead pencil in each hand hole. (Since the federal net weight law is in force, a somewhat different form of marking was adopted.)

The inspection problem is a difficult one, and has some very unpleasant features to the party entrusted with the enforcement of the rules. It is evident that of the number who are anxious to do a good job of grading and packing, there is quite a percentage who for one reason or the other do not succeed at first. Many of these will conquer the subject after a while, but there is now and then a hopeless case. Central grading stations at the various shipping points, managed by an impartial grader, appear to be the best solution of this problem.

Settlement for carload shipments is made with the members as soon as re-



FRANK RAUCHFUSS AND HIS ASSISTANTS IN FRONT OF THEIR DENVER STORE

QUALITY FIRST
BEEWARE QUALITY FIRST

INTERIOR VIEW OF THE STORE OF THE COLORADO HONEY-PRODUCERS' ASSOCIATION

turns are in. All records are made in duplicate, and each member receives an exact copy of his ledger account. At the end of the year, after inventory is taken, any surplus left, after the dividend on the stock has been declared, is divided among the members that have sold honey through the association, according to the amount of commission paid by them. Taking a series of years, including some very light crops, it has cost our members less than 3 percent to market their crop through the association. The prices obtained are better than those obtained by individuals in nearly all cases. It is proven by the unsolicited increase in membership and the larger amount of honey handled.

Members are not compelled to sell their crop through the association, neither are they compelled to buy their supplies of the association, the utmost liberty is allowed each individual, except that, after having reported their crop to be sold through the association, they should do so. The great benefits of co-operative buying and co-operative selling have been fully discussed, in the past few years, by the press of this country, and it is unnecessary to take up the space here. We have shown in the above that beekeepers can and should avail themselves of the advantages to better their condition.

Denver, Colo.

Texas News Notes

BY E. G. LE STOURGEON.

CONDITIONS in Texas are marvelously encouraging. We have never had a more forward spring nor better prospects. In some of our yards during the last week in February we found conditions pointing to an early swarming season. In one colony there were two solid frames of drone-brood, capped from top to bottom bar on both sides of each frame. Some neighbors were reporting the presence of drawn queen-cells before the end of February.

Bees consumed less winter stores during the past season than usual. Many beekeepers report having actually more honey in the hives now than when put into winter quarters. At our Loma Linda apiary in Bexar county we found empty shallow supers put on 34 colonies in October to be filled with capped honey on visiting them last week. This apiary is located in an irrigated farm district, and its condition shows that our bees worked practically all winter. The source of this winter honey was apparently broomweed and other varieties of ground flowers growing along the irrigation laterals.

The beekeeping industry in Texas is receiving a great impetus from the agitation of the cotton reduction idea. The farmers whose sole dependence for a cash crop has been the fleecy staple, are facing the necessity of finding some other salable product, and many of them are inquiring about honey production with earnestness. As a matter of fact, the honey producing possibilities of Texas have hardly been touched, and a marked increase in number of colonies operated and men interested will develop from the present situation.

Beekeepers in States farther North who care to try the experiment of buying bees from Texas to be shipped just at the beginning of their honey-flow will have ideal conditions this spring. On account of the open and early season every well cared for south Texas apiary will be overstocked with bees when our first flow has been harvested and these willing workers could be made available.

Should any reader be interested in any question pertaining to Texas beekeeping or to conditions in the southwest, we will be glad to reply through the columns of the American Bee Journal.

San Antonio, Tex. March 5.

House Apiaries

BY R. F. HOLTERMANN.

ON page 45, I notice a letter by Mr. H. Spuhler, of Zurich, Switzerland, upon the subject of "House Apiaries." I read with a good deal of interest European apicultural literature and have done so with profit to myself. I rather agree with the view that in America the house apiary is not the proper thing, if the apiary is conducted on a scale large enough to make a business of it. I have twice had a house apiary. I built a bee house and cellar, the buildings alone costing me over $1000, and arranged the walls so as to leave an outlet for 50 colonies, but when it came to the practical application I did not have the faith to carry it out. True, the angry bees are often bees that do not belong to the hive we are examining, but quite often they are. If the latter were not the case, then "peppery," irritable colonies would be unknown to us, and every beekeeper worthy of the name knows that he has colonies much more difficult to handle, without being strong, than others.

I however admit that an enclosed place appears to take much of the fight out of them. Here in America, including Canada, to use gloves for handling bees is a rare thing. I have been connected with beekeeping now over 30 years, and have seen a good deal of beekeeping, and during my travels or at home have very rarely seen gloves used in the apiary. They have never been used in my apiaries as far as I know—a lady from England who spent a summer with me had always used them in that land, but I would not relent and allow her to use them. I understood she felt like quitting, but she afterwards thanked me for my persistence. Then a young man from Canada told me afterwards, when he found he would have to work among the bees without gloves, he almost decided to go home. He too, decided I was right.

To work upon the floor upon which the hives are standing, or to have their floor connected with the working floor disturbs them, and I do not want to do this.

THE LEAF HIVE.

As to the leaf hive, I have had them, have some empty now. I feel quite sure that I cannot manipulate frames as rapidly by that method as from above. When it comes to the system of extracting during the honey flow from combs capped, leaving those partly filled behind; with my flow I do not want to adopt that system. I let the supers and frames accumulate until the close of the honey flow and then extract. Even if only capped honey is extracted, this honey is much thinner if extracted as soon as capped than if left on the hive until the close of the honey flow. There is a very marked difference. There is no reason why the honey cannot be extracted warm with our system. When it comes to the quantity of honey extracted, we have extracted on an average 1000 pounds an hour, keeping it up for a day. I feel very sure that is quite outside of the range of the leaf hive.

In regard to wintering bees in houses above ground, as suggested by Mr. Spuhler, a good many of us think that about the worst place for a colony of bees to winter. I have seen several such structures, and in no one case did the bees winter well in them. Where neighbors are close, and the area at the command of the beekeeper is very limited, and not many colonies kept, the "house apiary" may be an important help to overcome difficulties.

Brantford, Canada.

[Location, climate, circumstances of different kinds constitute the reasons for differences of opinions on the subject. Wintering bees in the shelter of a bee house has not proven injurious in our case. On the contrary, the bees wintered best for us in a bee house. But in every other particular, our experience tallies with that of brother Holtermann. We will be glad to hear from others upon this subject.—Editor.]

No. 4.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(Photographs by the author.)

CATNIP.

THE mint family of plants is a very large one, with square stems and opposite leaves. Most of the mints are aromatic, and many are used in medicine or cookery. Among the better known mints may be mentioned: lavender, spearmint, peppermint, pennyroyal, rosemary, germander, horsemint, horehound, savory, sage and many others. There are several well-know bee-plants among the mints, two of which will be here considered. The rest will wait until such time as we are able to secure satisfactory pictures, as the chief object of this series is to enable the reader to recognize the plants under consideration.

Catnip, or catmint (*Nepeta cataria*), was introduced from Europe, and cultivated in herb gardens. It is thus an escaped introduction and has become very widely naturalized in the United States. Although it is generally considered a weed, it is usually to be found only in the vicinity of buildings and gardens, and seldom spreads into the fields to any extent. Almost all of us remember the popularity of catnip tea among the grandmothers of an earlier generation. The plant is a perennial growing from 2 to 3 feet high, with flowers in clusters, the more conspicuous ones being in a terminal spike. The blooming season is rather long, and the bees visit it very freely. Apparently the plant yields much nectar, although it is seldom present in sufficient quantity to test its real value as a honey producer. If it had sufficient value for other purposes to justify its cultivation, it would probably be an important source of nectar.

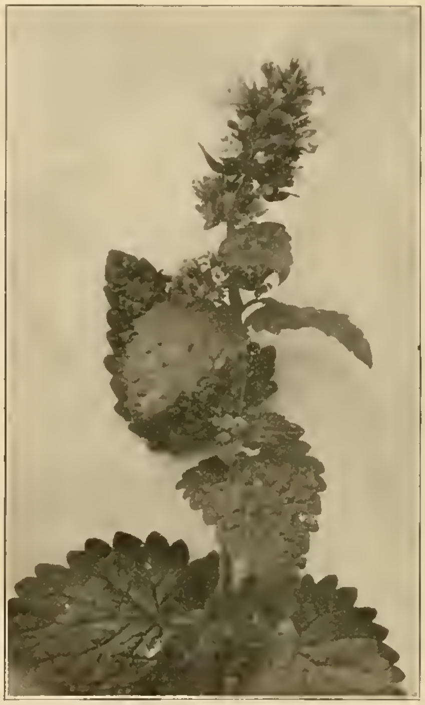


FIG. 17.—CATNIP

HORSEMINT.

There are several different species of horsemint (*Monarda*), known also as bee-balm and wild bergamot. Some of the species are represented in nearly all sections from New England to Texas. The photograph shows *M. fistulosa*, the wild bergamot of the North. The corolla is so deep that, as a rule, the bees do not seem to reach the nectar. In some cases it is reported as yielding freely. Whether the corollas are punctured by other insects and the bees are thus able to reach the nectar, or whether the plant secretes so freely as to fill the cup up to the point where the bees are able to reach it, the writer will not attempt to say.

The horsemint of the South is said to be one of the best honey-plants, and is especially valuable in Texas where large yields are occasionally reported from this source alone. It is also reported as common in the southern States east of Texas, though less is heard of the honey production in other sections.

The honey is said to be of good color and body, but strong, although of fair flavor.

The horsemints are widely distributed, and where sufficiently plentiful are regarded as valuable honey-plants.

FIGWORT OR SIMPSON HONEY-PLANT.

Simpson honey-plant, or figwort (*Scrophularia marilandica*), is another very widely distributed plant. It is common in the woods from Maine to the Rocky mountains and south to the gulf. It is also said to occur on the Pacific coast. The same or a similar plant occurs in Europe and Asia.

It is a tall growing plant from 3 to 6 feet high with numerous small branches. The stem is four angled with rather long pointed leaves. The flowers are very numerous and quite small, as will be seen by the picture. It blooms in late summer, and is freely visited by the bees.

HEARTSEASE (*Polygonum*).

We now come to another large family with a variety of names. In some localities one name will apply while in another the plant will be known by an entirely different one. Smartweed, knotweed, doorweed, persicaria, lady's thumb, water pepper, heartsease, and several other names

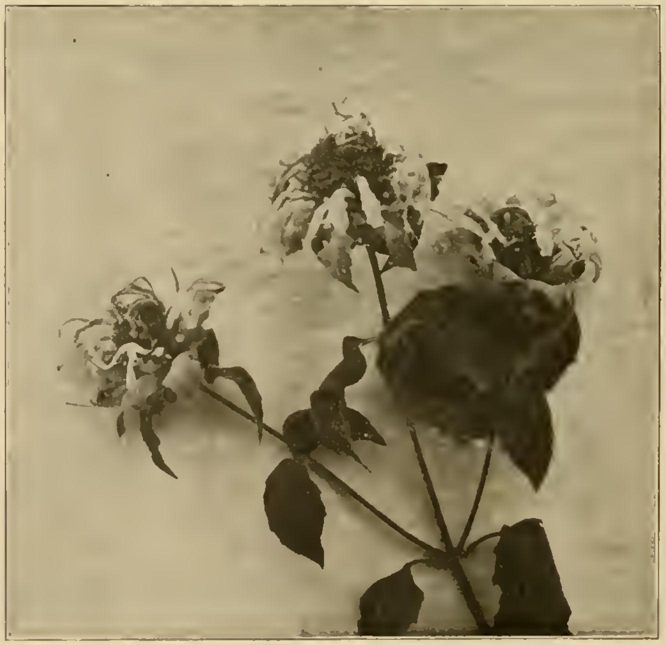


FIG. 18.—WILD BERGAMOT OR HORSEMINT

are applied to these plants. They are widely distributed, covering practically all of the United States and Canada, as well as much of Europe and Asia. *P. persicaria* or lady's thumb, the large flowered kind is most often called heartsease, and is also said to be the best honey producer. It is an introduced species, coming from Europe, and is still widely scattered through the sale of clover seed, the seed of this plant being common with red clover seed.

The honey gathered from these plants varies greatly, both in quantity and quality. Some species do not seem to yield at all, or at least not regularly, while others produce large quantities of nectar. The blooming period in the North is from midsummer until frost, and occasionally large yields are reported, an average of 200 pounds per colony not being the highest on record, from this source alone. Sometimes honey from these plants is of very good quality while from other species it is very dark and of poor quality. The better grade honey is sometimes designated as heartsease honey, while the poorer grade is called smartweed honey.

These plants grow in moist fields everywhere, and frequently come up in grain fields late in summer after cultivation has ceased, thus offering plentiful forage for the bees, in fields where otherwise they would find nothing.

Figure 20 shows two of the common kinds.

Atlantic, Iowa.

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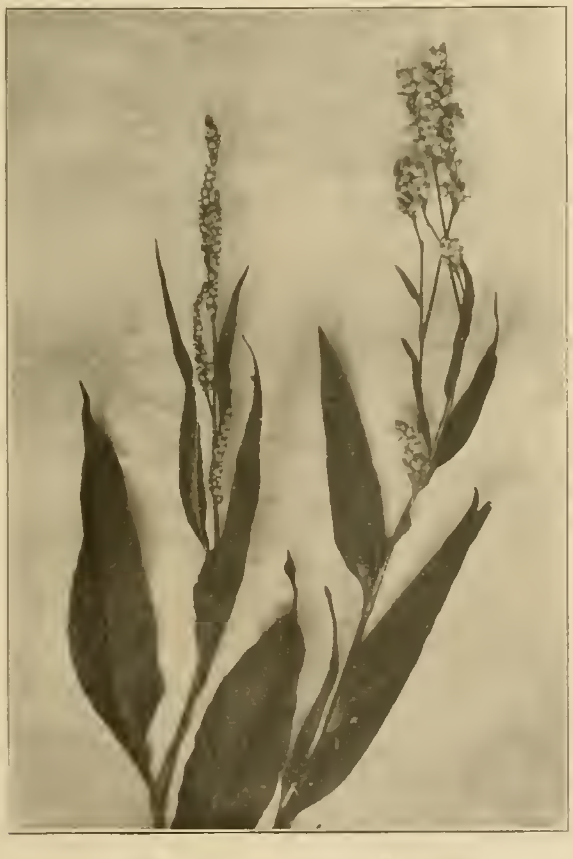


FIG. 20.—HEARTSEASE OR SMARTWEED

Bees as a Nuisance

BY S. D. GUSTIN.

INCREASING population, greater dissemination of knowledge, and the development and specialization of industries, pursuits, and occupations combine to add constantly to the complexity of the relations of individuals, and to call, from time to time, for the readjustment of the affairs of men to meet changed and changing conditions. In no other branch of the law is the ingenuity of the courts more heavily taxed in this manner than in the subject of nuisances, where, from the very nature of the subject, first principles, rather than specific legislative enactment, must always exert a controlling influence. The lawmaking power may, as occasion seems to require, declare that particular objects, actions, omissions, etc., shall be nuisances, either with or without regard to attending conditions or circumstances, but the application of such statutes is necessarily so limited that the general law of the subject is not affected.

It therefore follows that courts still deal with nuisances largely from the principles of the common law, and it is a matter of serious doubt whether, in any instance, specific legislative action can be proven to have any substantial value as an addition to the law of the subject. A nuisance at common law is that class of wrongs that arise from unreasonable, unwarrantable, or unlawful use by a person of his own property, real or personal, or from his own improper, indecent, or unlawful personal conduct, working in obstruction of or injury to a right of another, or of the public and producing such material annoyance, inconvenience, discomfort, or hurt that the law will presume a consequent damage.

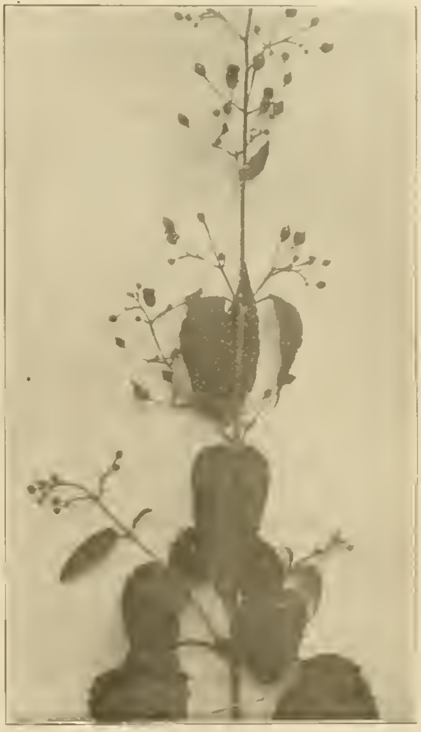


FIG. 19 —FIGWORT OR SIMPSON HONEY-PLANT

Text writers and legislative enactments state many variations of the foregoing comprehensive definition from Mr. Wood's treatise on nuisances, but there is no substantial disagreement as to what constitutes a nuisance. Another definition, stated broadly as a general proposition, is that every enjoyment by one of his own property which violates in an essential degree the rights of another is a nuisance; and this substantial violation of a right is the true test of a nuisance, for it is not every use of his property by one which works injury to the property of another that constitutes a nuisance. Injury and damage are essential elements of a nuisance, but they may both exist as a result of an act or thing which is not a nuisance because no right is violated. On the other hand the pecuniary injury may be insignificant and the act or thing causing them be such an invasion of the rights of another, or of the public, as to constitute a nuisance for which an action for damages or for abatement will lie.

Nuisances are classified by the law as public and private, and there is authority for a third class called "mixed" nuisances. A nuisance is public where it affects the rights of individuals as a part of the public, or the common rights of all the community alike; a private nuisance is one affecting a single individual, or individuals of a particular class, group, or locality, in a private right; the third class, referred to as mixed nuisances, are public in their nature, but at the same time specially injurious or detrimental to one individual or more in particular, who suffer a different or greater hurt than the community in general.

Nuisances are further divided into nuisances **per se**, or such as are declared so by the common law or by some statute, without regard to locality, surroundings, or circumstances, and nuisances **per accidens**, or those owing their hurtful consequences to some particular attendant circumstance, surrounding, location or condition, without which they would not be unlawful. There are other less important and rather technical distinctions not necessary to be noticed here. The foregoing preliminary and very elementary observations of the general law of nuisances are necessary to a consideration of any subject with reference to its existence as a nuisance or otherwise.

It is also a frequent statement of the law, and may be accepted as authoritative, that no lawful occupation or business is a nuisance **per se**, except it be declared so by some special enactment prohibiting certain things as objectionable to particular localities. So also the reasonableness of the use of one's property may depend upon its situation, for what might be lawful in one locality would prove intolerable in another. The use of a building in the midst of a city densely populated for a storage house for hardware would not be objectionable in the slightest degree, while the use of the same building for the storage of gunpowder or other high explosives could not be permitted.

The common law, proceeding from fixed principles of universal application, and developing from the growth of civilization, has, in each succeeding period, found ready adjustment to new subjects resulting from the widening dominion of mankind over the creatures and forces of nature, furnishing a ready remedy for every wrongful encroachment of one upon the rights of another. In the times of the early law writers bees were most generally known as they existed in their original state. Hence they were called—**ferae naturae**—and classed as wild animals. A property right, or at least a qualified property right, in them could be acquired by capture, which, in accord with the general rule concerning wild animals, existed so long as the captor could hold them in possession. A distinction seems always to have been made between the possession of animals ferocious and those of gentler dispositions, and it was indictable as a nuisance to permit an animal of known mischievous disposition to go at large. Bees, however, seem never to have been regarded as ferocious or as likely to do injury to persons or property, and in the far greater number of instances in which they have been the subject of judicial consideration the questions at issue have concerned the property interests in them. It is doubtful now, however, if any court would denominate them as wild animals, in view of the present general state of development of the industry of honey production and the numerous instances of State legislation designed to promote and protect the breeding and rearing of bees for that purpose. In the one or two cases decided in American jurisdictions in which the question has been presented, it has been determined, in accordance with the rule above referred to, that the keeping of bees, even in large numbers and in towns and villages, is not a nuisance **per se.**

But greater interest, perhaps, centers in the question of whether or not bees may be so kept as to constitute a private nuisance, and also whether municipal corporations, as cities and towns, may restrain or prohibit their presence within the corporate limits. In answering the first proposition, it must be borne in mind that persons who dwell in urban communities must of necessity submit to such restrictions upon their absolute liberties that the dwellings of other persons therein shall be tolerable. As it is the unreasonable or unwarrantable use of one's premises or property, otherwise lawful, that contributions an essential element of a nuisance, a first inquiry in any case would be directed to this point of reasonableness of the use or occupation, and in determing this all of the surrounding facts and circumstances would enter into the consideration. The presence of one colony at a given point might be perfectly consistent with the due observance of the rights of the owner of the next lot, while a colony stationed at another point within the same distance would be obnoxious to the law. Again, one colony at a given place might pass unnoticed, while a number of colonies at the same place would be a nuisance. The habits of the bees, the line of flight, the temper and disposition of the colonies, either separately or when collected together in numbers, might all furnish matter of more or less weight in reaching a conclusion. So also the character of the annoyance or injury done to the complainant must be a substantial element. In the only reported case involving this question it was charged, and the court found there was proof, "that during the spring and summer months the bees so kept"—140 colonies on an adjoining city lot and within 100 feet of plaintiff's dwelling —"by defendants greatly interfered with the quiet and proper enjoyment and possession of plaintiff's premises, driving him, his servants and guests from his garden and grounds, and stinging them, interfered with the enjoyment of his home, and with his family while engaged in the performance of their domestic duties, soiling articles of clothing when exposed on his premises, and made his dwelling and premises unfit for habitation." These facts were held to constitute a nuisance, against which the plaintiff was entitled to injuction and nominal damages. These facts just recited, however, probably present an extreme case, the immediate proximity of so many colonies being, no doubt persuasive evidence that the annoyance suffered by the plaintiff was due to the defendant's use of his premises. Greater difficulty would be experienced in reaching such a conclusion if there were no colonies stationed in the immediate vicinity, a thing entirely possible under the common belief that the insects go considerable distances for their stores.

So it may be said of bees, as of other property, that no hard and fast rule can be laid down by which to determine in advance whether the presence of bees in any given numbers or at any given point will amount to a nuisance. But, not being a nuisance of themselves, as a matter of law, and absent also any general State enactment declaring them to be such, bees will not, under any circumstances be presumed to be a nuisance, but the matter will rest in the proof adduced, with the burden upon the party alleging the affirmative. But they may, upon proof of particular facts showing all the elements necessary to the existence of a nuisance, be condemned as such, either of a private or public character, as the nature of the injury might decide.

Predicated upon the theory advanced in the beginning that courts would now, if the matter were called in question, decide that bees are domestic animals, and it having already become a matter of legislative recognition that they are subject to communicable diseases, a question arises as to the liability of the keeper of diseased bees. At common law it was an indictable offense, which has been re-enacted by statute in most of the States, to take a domestic animal suffering from a communicable disease into a public place or to turn it into the highway so that the disease might be communicated to the animals of other persons. It could hardly be said to be less culpable to knowingly keep diseased bees, which, by their nature may not be restrained or confined, to spread disease to the apiaries of other owners. If to turn a horse with glanders or a sheep with footrot into the highway is a public nuisance, on the same reasoning to turn bees at large to carry communicable diseases peculiar to them to other bees ought to be an offense of the same grade.

The power of a municipal corporation, as a town or village, to restrain or prohibit within its limits the keeping of bees, or to denounce them as a nuisance, is commonly reported as a fruitful source of vexation to keepers of bees, but one case only is reported as involving a judicial determination of that particular point. And here, too, a few preliminary observations will be necessary to a proper understanding of this phase of the nuisance laws. Cities, towns, and villages, as municipal corporations or public bodies, receive their powers by express grant from the legislative authority of the State, and with the exception of some unenumerated powers without which the corporate body could not exercise its essential functions as such their powers are limited to those expressly named in the grant. This grant of power is usually contained in the general laws of the State governing cities, towns and villages, and is called the charter power, the law or statute itself being usually known as the charter. Keeping these facts in mind will aid the unprofessional man in understanding the terms to be encountered in an examination of local laws in regard to the power of a municipal corporation to legislate upon this subject.

Every State has its own peculiar policy toward these municipal corporations, and no two are exactly the same. They all, however, follow the same general plan, with variations influenced by local conditions. As the power of the State legislature is limited that its acts must be consistent with the constitution, so the power of a municipal corporation to make bylaws, as its ordinances or enactments are commonly known, must be in harmony with its character, with this further distinction, that while the legislature of the State may exercise unlimited discretion in all matters not prohibited by the constitution, a municipal corporation is restricted in legislative action to those matters in which it is expressly authorized by its charter.

It is the general rule that cities, towns, and villages have conferred upon their common councils power to declare, abate, and remove nuisances. In the case of nuisances per se, whether at common law or by statute, or by ordinance in those cases in which the council may declare such nuisances, the power to abate by summary action is either expressly given or exists by necessary implication. Summary abatement means arbitrary removal or destruction without judicial process. Nearly, if not quite, all city charters contain grants of power to license, regulate, and restrict all businesses, pursuits, and avocations, and also a section known commonly as a general welfare clause, by which the corporate body is empowered generally to enact such ordinances, rules and regulations as may be necessary to preserve the peace, safety and health of its inhabitants and promote their general welfare. To undertake to set out the specific provisions of the charter of the municipal corporations of the various States would extend this article far beyond its intended scope.

It is a cardinal rule of the courts that all ordinances must be reasonable, and that while a city may define, classify, and enact what things or classes of things shall be nuisances and under what conditions and circumstances such things shall be deemed nuisances, this power is subject to the limitation that it is for the courts to determine whether, in a given case, the thing so defined and denounced is a nuisance in fact, and that if the court shall resolve this point in the negative the ordinance is invalid. Under this rule, in an Arkansas case, it was held that the municipal corporation could not prohibit the keeping and rearing of bees within its limits as a nuisance regardless of whether they were so in fact or not. And this case seems to have been received as announcing the correct rule in recent text works, though the point has not been raised elsewhere in controversy.

Under the rule just stated, the power of summary abatement would not exist, even though the presence of bees in a particular part of the city should be declared objectionable, but the point would rest as has been heretofore observed in the proof adduced, the burden being upon the party declaring the affirmative of the issue.

(The foregoing question of "Bees as a Nuisance" so ably treated in this article was settled a number of times in the courts. We will in our next number republish the report upon this subject, made in 1890, by Thos. G. Newman, then General Manager of the National Association and editor of this magazine. It is very concise. There was also published, in 1904, by Mr. N. E. France, the last General Manager of the National, a very exhaustive pamphlet of 38 pages, entitled: Legal Rights. This might be worthy of a reprint. Editor.)

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Red Clover Bees—Comb or Extracted Honey ?

1. What race of bees, if any, works on red clover?

2. What is the best way to prevent swarming, my bees are in 8-frame hives ?

3. Can I take a colony and make four or five out of it and put a new queen in each; if so, how ?

4. On which can I make the most, comb honey at 15 cents a pound or extracted at 11 cents ? ONTARIO.

ANSWERS.—1, There is no particular race of bees that works on red clover. Sometimes the blossoms are shorter than usual, or more full of nectar, and then bees of any race may work on it. At different times bees have appeared with tongues long enough to reach red-clover nectar, but the strain seems to work back pretty soon to shorter tongues.

2. I'd give a pretty penny to know. Perhaps as good a way as any is to run for extracted honey and use the Demaree plan; as soon as danger of swarming, put all but one frame of brood in an upper story over an excluder, killing any queen-cells, and leave the queen in lower story with the one brood.

3. You may do it in a good season. One way is to wait until the colony is *strong*, then take a little more than half the brood and bees and put in a new hive on a new stand, giving a new queen and leaving the old queen on the old stand. When each of these becomes strong, divide again the same way.

4. Likely out of the extracted.

Foundation Splints—Inducing Queen to Lay

1. Next year I wish the bees to draw the foundation into combs and build to the bottom-bar a good many wired Langstroth frames; the same combs to be used the same year to make increase. How can I best accomplish it ?

2. I am bothered to get the queens to lay in combs that have been extracted from, without a honey flow and even with one. Under what condition can I induce queens to lay in them ? MICHIGAN.

ANSWERS.—1. I experimented a great deal upon this very thing, and succeded in no way so well as by using foundation splints, having the foundation come clear down to the botton-bar, and allowing the bees to have the foundation only when something was coming in from the field The use of these splints has been fully explained in previous numbers of this journal, and also in the book "Fifty Years Among the Bees." The frames may be wired, but it is not necessary.

2. I don't know just what the trouble can be. The queen ought to lay in such combs any time she needs room to lay, unless you put them too much out of her reach. They should be put next to combs already occupied with brood.

The Alley Trap—Mixing Races of Bees

1. If I use an Alley trap on a hive and the colony should swarm while I am away for a few days, will they stay around or near the hive any length of time, or will they leave if not hived the same day ?

2. Would there be any objection to keeping one colony each of Italians and Carniolans near each other ? Would it harm either one, cause mixing or trouble ? I would like to try both breeds. NEW YORK.

ANSWERS.—The trap holds the queen, and when the swarm finds it has no queen it will return and await your pleasure.

2. There will be no trouble until a young queen is reared in either hive, and then it may not be purely mated. Likely it will not anyhow, since bees of other breeds are likely within a mile or two.

Bees Restless in Winter

I have two colonies of bees I moved 14 miles last December. I packed them in chaff about 3 inches thick, and they have plenty of honey. They seem restless and come out of the hive when it is 20 degrees below zero. What is the cause of this? Are they too warm ? PENNSYLVANIA.

ANSWER.—The likelihood is that not very many bees are coming out, and a very few need cause no alarm. If the number is considerable it may be that a mouse in the hive is disturbing them, or that they are troubled with diarrhea. In the latter case a good flight the first warm day will cure them, unless, indeed, they have unwholesome stores which will keep up the trouble more or less until warm weather comes,

Shallow Divisible Hives

For some time I have been reading periodicals and catalogs treating on bee-hive equipments and their relative merits. I have decided that a divisible hive consisting of shallow frames and supers, one, two, or three, according to the strength of the queen, is about what I want. Is it a practical combination? I see in the A B C and X Y Z of Bee Culture a divisible hive used by J. E. Hand that looks good. Does he still use a divisible hive and recommend it? I see in the American Bee Journal he uses a 16-frame hive. Is it brought about by vertical or horizontal expansion? The first by placing eight frames on top of eight or side by side, sixteen in all. I wish to winter out-of-doors, and think I can make a warm hive of the shallow frames and supers by contracting the brood-nest horizontally with a tight division-board on each side and packing between them and the outside; the ends being closed. ONONDAGA.

ANSWER.—I doubt the advisability of your trying shallow or divisible chamber hives. To be sure some good beekeepers use them, but the majority of beekeepers prefer a frame not less than the Langstroth, and some like a still larger frame,

Position of Frames in Nuclei

In making nuclei, which of these methods would you recommend:

1. Two frames of brood, then one frame of honey, then division-board, all at one side of the hive body, with rest of space vacant?
2. Two frames of brood, one frame of honey, at one side of the hive body, with rest of space filled with frames of foundation?
3. Two frames of brood in center of hive, frame of honey on one side, frame of drawn comb or honey on the other, with frames of foundation in rest of space?

If your practice is different from any of these will you please give it? ILLINOIS.

ANSWERS.—1. If I were to choose between the three, I think I would take the third. But I think I would not have the brood in center of hive, but put the honey at one side, then the two frames of brood, and then the drawn comb (either empty or with a little honey). Then I would add comb or foundation as needed, preferring the comb if available.

Transferring—When Does Brood-Rearing Begin?

1. When is the best time to transfer bees out of old box hives into modern ones?
2. When does the queen begin laying in the spring? TEXAS.

ANSWERS.—1. The favorite plan nowadays is to wait until the colony in the box hive swarms, hive the swarm in an up-to-date hive, setting it on the old stand and the old hive on a new stand, and three weeks later, when all the worker brood has hatched out, transfer what is left in the old hive, or else melt up the old combs and give the bees to the swarm.

2. In a colony wintered outdoors she begins, in the north, in February, or even in January. In Texas probably earlier. If cellared, she begins about the time bees are taken out of cellar.

Dividing to Prevent Swarming

My start was made in 1913, when on July 3 I found a swarm in a large oak, which we hived July 25. By feeding sugar on warm winter days they came through strong. The hive they were in was a 10-frame. As I had no honey-board I gave them an upper story which the queen proceeded to fill with brood, although I took some very fine honey. As the bees increased rapidly, and would cluster out some, I decided to give more room and gave them a 28-section super between the stories which they began to fill nicely. After this they began again to cluster out on hot days, so I provided shade which did not seem to help matters; so I decided to take some brood, as I wished to keep down swarming.

I found a nice ripe queen-cell below while the old queen was above. Now I did not get to ascertain what would have occurred, as they were so close to the highway that they had to be moved, which was done with fatal results to the colony, although I was not much surprised as it was too hot, and I had to keep them confined in the hive to avoid further trouble. I think I should know better now, as I would remove the lid and put on a screen and thus provide plenty air,

1. Now what I wish to know is, had I put on a honey-board would it have proved all right, and what would have happened when the new queen emerged? Could I have set off the story and had two colonies? If this were feasible you see it would save rearing a queen.

2, Yet I am not without bees, as my neighbor who has several swarms gave me one when they swarmed. This swarm I divided, having them rear their own queens, and by giving them the old combs left from the other colony, I have four which went into winter with hives full, but only eight frames each. I have thought of giving them, in spring, each two stories for brood and then setting off and forcing most of the bees back in a single story with plenty of super room, and using the remainder as nucleus for increase. Would this be all right, and would you think it all right to give each colony a frame of young brood to rear a queen or a frame with ripe cell, and let the queen go with the nucleus?

3. Do you think this plan would save watching them so closely? I do farming, also trucking, and can not give much time to bees, OHIO.

ANSWERS.—1. I am not at all sure that putting on a "honey-board"—by which I suppose you mean a queen-excluder—would have made any difference. The super of sections acted a good deal as a queen excluder, as a queen is not likely to go through a super of sections to get into another story. When the young queen emerged below she might have issued with a swarm, although like enough she might have gone to laying below, and then you could have set off either story on a new stand as a separate colony. Or, you might have set on a new stand the lower story before the young queen emerged. But if you had put the queen in an upper story, with an excluder under, without the section super, it is not so certain that queen-cells would have been started in the lower story, since the distance between the two stories caused by the intervening section super is an important factor in making the bees feel queenless in the story without a queen. An objection, however, to having a section super under brood-combs is that the sealing of the sections will be darkened.

2. If you should take the queen away, and leave on the old stand a hive full of brood, the bees would be pretty sure to swarm with the first virgin emerging. But they would not be likely to do so with only a single frame of brood.

3. Yes, if you should leave on the old stand a single frame with only one queen-cell on it, you would not need to watch for swarming.

Bees in Chimneys, Etc.—Finding Bee Trees

1. How can I get a swarm out of a chimney? It is about 50 feet high. I do not like to ascend by means of a ladder, as some of the bricks near the top are loose.
2. Seeing one of your answers in the Bee Journal about getting a swarm out of a house, I would like to know if there is any danger of horses being stung, as a road runs about 3 feet from the house?
3. Do forest fires kill bees?
4. How can bees be hunted?

NEW YORK.

ANSWERS.—1. More than once I have had bees offered to me for nothing if I would take them out of chimneys, but always declined the offer, as the bees are not considered worth the trouble. If you can't get up with a ladder I don't know how you can get them.

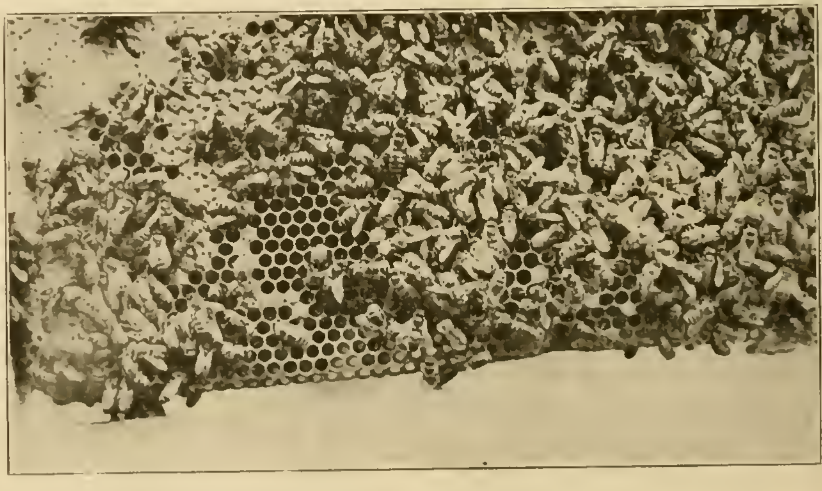
2. If the entrance of the bees faces the road, and it is not more than 6 feet high, there is danger; otherwise the danger is small.

3. Yes.

4. Set a bait of honey, and watch until bees fill themselves with it and fly away, and the direction they fly will indicate the direction of their home. Move your bait farther along in that direction and watch again, and so on until the bees fly back on their track, and then scan the trees between the last two places. Instead of direct lining, as described, you can cross line. After getting a line on their flight, instead of moving your bait in the same direction, move it a little farther along to one side, and at the point of intersection of the two lines you should find your bee tree.

Requeening from Prolific Stock

I introduced three Italian (golden) queens to three colonies last September. All colonies had an equal amount of bees. Two of the colonies are doing finely and are strong, while the third colony hardly has as many bees as it had when I introduced the queen, and they have very little brood. I only let mine have five frames and a follow board.



THE QUEEN ON A COMB OF BROOD AND BEES.—(Photo by J. L. Leath.)

1. I want to destroy that queen and give the colony a frame of unsealed brood with adhering bees from one of the other colonies, which is very prolific. None has yet a queen-cell; will it work all right?

2. Should I shake some bees from another frame into the weak hive will they be accepted with a flight, and where should I place the frame of brood, in the middle of the hive or at one side? The bees have plenty of stores. I fed them all winter on sugar syrup, two to one, and they have it sealed in their frames. One colony is so strong that I had to place another 10-frame hive on top, and that is the one from which I would like to get a queen for the weak colony?

3. When is the best time to make this change? CALIFORNIA.

ANSWERS.—1. It may and it may not. If you leave their old brood and merely add another frame of the brood of better stock, the chances are three to one that the young queen will be of the old stock. You can take away all the old brood and leave them only the one frame of choice brood, or you can, a week after killing the queen, kill all cells started, and then give them the frame of choice brood. Still another way, and a good way, is to swap their frames of brood for an equal number from your best stock.

2. Of course the colony will be stronger, and all the more likely to rear a good queen if you strengthen it with bees from another colony. There is not likely to be fighting, especially if the bees be given a day or two after the queen is removed. Put the frame of brood in the middle.

3. You can operate any time after the bees get well to work.

Requeening—Which Hive to Use?

1. If I introduce an Italian queen into a black colony of bees, will its offspring be pure?

2. I have 13 colonies. How many queens ought I to get to Italianize all of them?

3. Will they breed the blacks out?

4. Which hive do you think the better, the 8 or 10 frame? KENTUCKY.

ANSWERS.—1. When a new fertilized queen is introduced all the bees in the hive will be of the new stock just as soon as the offspring of the old queen have died off, and in the busy season that will be in about two months or a little more. If the new queen is pure Italian and purely mated, then all the new workers will be Italians.

2. It will take 13 queens, one for each colony, to Italianize them, if you want the change in blood to take place at once. If you will take more time to it, you can Italianize one or several at the start, and then from this new stock rear queens for the rest.

3. On the contrary, the blacks are likely to run out the Italians, especially if blacks are in the neighboring apiaries all around you. To keep up your stock it may be necessary for you to get one or more queens of pure blood every year or two, at least for some time.

4. Generally the 10-frame.

Transferring by the Swarm Method

I have 25 colonies in old box hives that I wish to transfer this spring. I bought them in November, 1913, and thought I would transfer them last spring, but a severe drouth came on early in May, then I waited until June 1, thinking they would build up and get stronger. I transferred one June 1, by the Wilder plan but they started robbing and I had to stop. I have looked through my old bee journals back to 1909, but cannot find just what I want. I would like to transfer them on full sheets of wired foundation and not give them any of the old comb. Can I do this, and if so when would be the best time? I have kept bees eight years, and have 81 colonies. ARKANSAS.

ANSWER.—Likely this plan may suit you: Wait until the colony swarms; then hive the swarm in the new hive filled with its frames of foundation, set it on the old stand and set the old hive close beside it. A week later move the old hive to a new stand six feet or more away. Two weeks later still at which time all the worker brood will have hatched out break up the old hive, adding the bees to the swarm, and melting up the combs.

REPORTS AND EXPERIENCES

Recreation for a Postal Clerk

In the cut you can see my apiary in the rear of my back yard in this little city of 6000. My bees do not cause any annoyance to my neighbors and are very profitable, and working them provides me a very much needed outdoor exercise.

I have been reared among them, and early in life learned to love them. My first experience was with the common black bee and the round log and box-hives. As I learned them and began to study books on the subject, I determined some day to have an apiary with the very best hives and the best stock of Italian bees. This I now claim to have.

With this small lot of pure three-banded Italians, we have all the honey our family will make use of and some to spare I have taken great pains in selecting my queens, and have discarded every one that does not give the very best results.

I procured my stock from some of our best breeders. We are not in the very best honey location here, but my home and business are here, and I work my bees during spare time. You can see in the cut a 6-foot fence that I erected so that my bees would not bother my neighbors. My banner colony last year gave me $12 worth of surplus at 20 cents per pound. J. L. LEATH.

Corinth, Miss.

Mr. F. Wilcox Reports

Bees appear to be wintering well here. There is some European foulbrood in this county yet. F. WILCOX.

Mauston, Wis., Feb. 15.

Bees in Carolina

I have just returned from southeastern North Carolina, and can give our friend in England, on page 64, an answer. I was there nearly three weeks. I saw, on Feb. 12, hatching brood; the maple, violets, and jonquils were in full bloom; the roses and wild plums were budding. The bees were working as busy as in the main honey-flow. I visited several beekeepers, and saw at some hives combs built under and on the sides. One swarm had its home on a limb of a tree. Of course, they were sheltered to keep the rain off; they are there more for curiosity than for anything else.

I saw several old-fashioned log-hives, some had cracks from top to bottom the size of my two fingers, and wintered through all right, and had sealed brood to the bottom. The beekeepers expected swarms in March. The locality is full of gooseberries, huckleberries, blackberries, black gum and other wild honey plants. I aim to move there as soon as I can.

PETER SCHAFFHOUSER.

Indianapolis, Ind., March 3.

Look for Good Season

The indications are for a good honey year. The bees were carrying in pollen on Washington's birthday. All colonies are alive and doing well. We are in hopes of having a very prosperous season.

W. H. POOLE & SON.

Yonkers, N. Y., Feb. 25.

Spraying During Bloom

It will soon be time for spraying. For all fungus diseases on fruit trees, spraying should be done early; that is, before blooming time, and before the leaves are out. The material usually used is the lime sulphur mixture or Bordeaux mixture. If spraying for the insects that get into the fruit, especially the codling moth worm, this should be done not sooner than after the bloom has fallen.

I have the life history of the codling moth by Prof M. V. Slingerland, of Ithaca, N. Y., and Prof, Fabian Garcia, of Santa, Fe, New Mexico. While the last mentioned is located so far south, yet his account and Prof. Slingerland gives nearly the same time for the codling moth to first make its appearance

APIARY AND HOME OF J. L. LEATH AT CORINTH, MISS.

in the spring. The first appearance is never before the blooming time in any appreciable numbers; in fact, they cannot appear until it gets warm enough for flight. In all cases of observation by these two gentlemen, no eggs for the worms appeared until the bloom had fallen, and in most cases not until some time after.

It is now conceded by leading fruit men that spraying should never be done while the bloom is out, as the poison destroys the embryo fruit itself. Some years ago, when the writer was at the Missouri Horticultural meeting at Moberly, a paper was read, and the writer stated he did not know why he should not spray in blooming time, as he considered his fruit interests worth more than all the bees in his county. He had done so, but for some reason had but little fruit to set that year. It was explained by Dr. Scott, from the experiment station at Washington, D. C., that to spray during bloom would destroy the prospect for fruit.

If any are interested, I would recommend their sending for the bulletins by the above mentioned authors, Bulletin No. 142 of January, 1898, Ithaca, N. Y., and Bulletin No. 65 of May, 1907, Agricultural College, New Mex.

Mexico, Mo. J. W. Rouse.

Late Spring in Arkansas

The spring has been one of the latest of which I have any record. February, through which bees generally gather much pollen and make a good start at breeding, offered scarcely a day upon which they might fly. The first pollen was found Feb. 11, and some sealed brood noticed on the 25th. Today, March 2, soft maple is yielding pollen. Fruit bloom, our first nectar supply, seems remotely distant, but may thereby escape destructive frosts. The past winter has been ordinary. I have not lost a colony.

Ft. Smith, Ark., March 2. L. E. Kerr.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

Caucasian and Carniolan queens from the original importer. See larger adv't.
Frank Benton, Cher. Sta., Washington, D. C.

Queens—The quality kind, 3 band Italians only. Winners at Hartford and Berlin, 1914. Untested after June 1, $1.00.
A. E. Crandall & Son, Berlin, Conn.

Italian Queens, bees by pound. Descriptive list free. Apiaries under State inspection. Leaflets, "How to Introduce Queens," 15c, "How to Increase," 15c. Both, 25c.
E. E. Mott, Glenwood, Mich.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Wanted—To send our list to you of our famous honey gathering and almost nonswarming strain of Golden queens. No better bees of any strain to be found. One fr. untested, $1.00; 6 for $5.00; 12 for $9.00. Write us what you want. T. S. Hall,
Talking Rock, Ga.

Phelps' Golden Italian Bees are hustlers.

Bees, $1.50 per pound; with queen and fr. brood, $2.50. C. H. Cobb, Belleville, Ark.

Vigorous Prolific Italian Queens $1.00 each; 6 for $5.00. A. V. Small,
2302 Agency Road, St. Joseph, Mo.

Archdekin's fine Italian queens and bees. See larger ad. in this issue.
J. F. Archdekin, Big Bend, La.

Notice W. W. Talley will sell bright Italian queens this season at 60c each, $7.00 per dozen. Safe arrival guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Queens of Quality—I am booking orders for early queens now. Three-banded Italians only. Circular free.
J. I. Banks, Dowelltown, Tenn.

Italian and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.
Grant Anderson, San Benito, Tex.

Italian Queens for sale this season at 60c each; $7.00 per dozen. Ready April 15. Safe arrival guaranteed. T. J. Talley,
Rt. 3, Greenville, Ala.

Place your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens. John W. Pharr,
Berclair, Tex.

Quirin's superior improved queens and bees are northern bred, and are hardy. Orders booked now. Over 20 years a breeder. Free circular. H. G. Quirin, Bellevue, Ohio.

Golden Italian Queens, about June 1. Untested 75c; half doz., $4.00. Tested, $1.25. Pure mating guaranteed.
J. I. Danielson, Rt. 7, Fairfield, Iowa.

Try my best bright yellow queens. They are beautiful and good honey "getters;" 60c each or $7.00 per dozen. Safe arrival and satisfaction guaranteed. M. Bates,
Rt, 4, Greenville, Ala.

Three Band and Golden Yellow Italian Queens. Untested, one, $1.00; six, $4.50. Tested, $2.00, ready April 15. Safe arrival. Send me your orders early,
E. A. Simmons, Greenville, Ala.

The Secret of Success is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and $1.00 for tested G. W. Moon,
1904 Adams St., Little Rock, Ark.

Queens, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C, Clemons, Boyd, Ky.

For Sale—After June 15 Golden Italian queens. Strictly northern bred and hardy. Fine honey gatherers and gentle. No disease. Safe arrival guaranteed. Untested, $1,00; 6, $5.00; 12, $9.00. Tested queen after July 15, 50c each extra.
J. Stuart Scofield, Kirkwood, N. J.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

If You Need a queen for that queenless colony, you want it as soon as you can get it. We can furnish tested queens by *return mail.* $1.00 each Three-band Italians, bred for business. No disease. Satisfaction guaranteed in every case. J. W. K. Shaw & Co.,
Loreauville, La.

Famous North Carolina Italian Queens for for sale. Reared from Howe's best breeders. Mated with Root's, Moore's, Davis', select stock. Free from disease. Untested, one 75c; per doz, $7.50. Select untested, one, $1.00; per doz., $9.00. Tested, $1.25; select tested, $1.50. Breeders, $3.00 and $5.00.
H. B. Murray, Liberty, N. C.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

I can supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed'
I. N. Bankston, Buffalo, Tex.

Three-Banded Italian Queens ready April 1, of an exceptionally vigorous and long-lived strain of bees They are gentle, prolific, and good honey gatherers. Untested, $1.00; 3, $2.50; 6, $4.50; 12, $8.00. Tested, $1.25; 6, $6.50; 12, $12. Jno. G. Miller,
723 So Carrizo St., Corpus Christi, Tex.

Notice—R. A. Shults will sell Italian queens in the season of 1915. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00. Breeders, $5.00. Bred from Moore and Doolittle stock. R. A. Shults.
R. F. D. 3, Cosby, Tenn.

From Southern New Mexico—My yards will be able to furnish you bees by the pound at an early date. No disease. Satisfaction must be yours. Write at once. I can surprise you on prices. Established in 1914. S. Mason, Hatch, New Mexico.

For Sale—Queens, three-band Italians. Extra good strain. Their bees are great hustlers. Only drones from selected queens near mating yard. Untested, one, $1.00; 6 for $4.50; 12, $8.00. Ready June 15. When ordering, state time within which queens are wanted. They will be mailed promptly or money returned. D. G. Little,
Hartley, Iowa.

California Queens, Nuclei and Bees bred from the best Doolittle stock, ready for shipment at once. Queens, untested, 75c; dozen, $8.00. Tested, $1.25; dozen, $12. Mismated, one year old, 50c; dozen, $5.00. Tested, one year old, 75c; doz., $8.00. Nuclei, 2-frame, $1.50; 3-frame, $2.25; 5-frame, $3.00; 10-frame colony, $4.50. Bees by pound, ½ lb., 75c; one lb., $1.00. Add prices of queens desired to all above prices of bees and nuclei. Delivery guaranteed. No disease.
Spencer Apiaries Co., Nordhoff, Calif.

500 Sample Queens at 40c on first 500 orders. Moore's Strain Leather Colored Italians. Write for particulars and prices in quantity. April and May orders booked now on 10 percent deposit. Orders filled promptly or notice given when such deliveries can be made. Regular prices: Untested queen, 75c; six, $4.25; twelve, $8.00. Timberline Riggs, breeder.
Ogden Bee & Honey Co., Ogden, Utah.

"A Guide Post"—A guide post that directs to a big honey crop is good queens. We have them, untested goldens or three-band Italians, $1.00 each; $4.25 for six; $8.00 per dozen. Lots of 100 or more, 60 cts. each. Tested queens, $1.50 each. Best breeders, $5.00 each; full 8-frame single story colonies, $5.00 each. Safe arrival and good satisfaction. Best new crop orange blossom extracted honey; fine indeed. Write for prices.
Rialto Honey Co., Box 73, Rialto, Calif.

I will again sell bees and queens shipped from north Louisiana in April. In cages, 1 pound, $1.50; 2 pound, $2.50. In nuclei, 2 comb, $2.75; 3 comb, $3.75. Six or more at one time to one address 5 percent discount. 1914, or young Italian queens for business; $1.00 extra. Queens only at $1.25. Shipments will be put up by experts under my personal supervision. I will try to please. A receipt in good condition will be taken. Part payment will secure the order. Bees shipped from Jonesville and Black River, La.
H. C. Ahlers, Jonesville, La.

Gray Caucasians—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application. J. J. Wilder,
Cordele, Ga.

Happy!—If you wish to be happy just send me an order for some of my beautiful queens. Untested, $1.00 each; $4.25 for six; $8.00 a dozen. Tested, $1.50 each. Full 8-fr. colonies, single stories with untest. queens, $5.00; pounds of bees in light combless shipping cases, $1.25 without queens. Any queens you may desire with these can be sent with bees at prices above. Discounts on large orders. Safe arrival and good satisfaction to all customers. Only best three band and golden Italians. J. B. Atchley, Patton, Calif.

Three-Banded Italian Queens.—Before July 1: Untested, 1, $1.00; 6, $5.00; 12, $9.00. Select untested, 1, $1.25; 6, $6.25; 12, $11.00. After July 1: Untested, 1, 75c; 6, $4.00; 12, $7.00. Select untested, 1, $1.00; 6, $5.00; 12, $8 50. Nuclei, 1-frame, 75c; 2-frame, $1.50; 3-frame, $2.25. To each nucleus, add price of Queen. Our Queens are reared in a locality where there has never been disease, from strong vigorous colonies. The apiary is under most competent supervision. Safe arrival and satisfaction guaranteed.

Horner Queen & Bee Co., Ltd.,
Youngsville, Pa.

Have You Heard of the famous Atchley queens? If not, you will surely be pleased not only to hear of, but to use these queens. James Whitecotton, of Laguna, Uvalde Co., Tex., says: "I am glad you have gone back to rearing queens again. I have been buying Atchley queens for 25 years, and the best queens I ever bought came from you." Only the best three band and goldens. Untested, $1.00; $4.25 for six; $8.00 a dozen Tested, $1.50 each. Bees by the pound and full colonies on application. I can handle any sized order. Safe arrival with satisfaction and promptness my motto. A. T. Atchley,
Highland, Calif.

Moore's Strain and Golden Italian queens. Untested, one, $1.00; 6, $5.00; 12, $9.00; 50, $35. Carniolan, Banat and Caucasian queens. Untested, one, $1.25; 6, $6.00; 12, $10. Tested, any kind, one, $1.50, 6, $8.00 Choice breeding queens of any kind, $5.00 each, Nuclei, 2-frame, $2.50; 3-frame, $3.25; 10-frame, full colony, $5.00. Bees by the pound, $1.25. Add price of queens desired to all above nuclei and bees. Comb foundation, Circular free, Genuine orange blossom and mountain sage honey, one gallon can, $1.20; five gallon can, $5.50; case, two five gallon cans, $10. Samples, 10c each. Everything securely packed or crated and delivered at Orange depot. Safe arrival and satisfaction on everything we ship guaranteed. W. H. Rails, Orange, Calif.

HONEY AND BEESWAX

For Sale—Fancy orange-blossom honey. Send for price list. James McKee,
Riverside, Calif.

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale—Extracted honey, basswood and light amber in 10-lb. pails. Can be sent by parcel post. Write for prices.
E. E. Mott, Glenwood, Mich.

For Sale Nice, thick, well ripened amber extracted honey; mild flavored; two 60-pound cans to a case. Single cans, 8c; by case, 7c; ten case lots, 6½c per pound.
H. G. Quirin, Bellevue, Ohio.

For Sale — Spanish-needle, hearts-ease No. 1 light comb, $3.00 per case; fancy, $3.25. Mixed fall comb, $2.50 to $2.75 a case; 24 Danz. sections to case. Extracted, 120-lb cases 9c per pound. W. A. Latshaw Co.,
Carlisle, Ind.

Extracted Honey—Best Water White and nice Amber Alfalfa in 60-lb., 30-lb., and smaller tins. State quantity you want. Special prices on ton lots or over. Several carloads just in. Dadant & Sons, Hamilton, Ill.

SUPPLIES.

For Sale—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

Bee Supplies, all kinds, low prices. Catalog free. J. W. Rouse, Mexico, Mo.

Beekeepers and fruit growers let us send you our 1915 catalog.
J. A. Guyer & Sons, Marion, Ind.

Brother Beekeepers, send for my new prices on Supplies. I can save you money. Beeswax wanted. W. D. Soper,
Jackson, Mich.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

For Sale—I am selling foundation and paying the freight to your station anywhere in La. Root's goods for sale. Send me your orders. Am paying 28c cash for wax or 30c in trade delivered here.
J. F. Archdekin, Big Bend, La.

Standard Dovetailed 'Hives shipped direct from factory in Iowa. Fine 8-frame for $6.00. Hoffman frames, $2.75 per hundred. Plain sections, $4.20 per M. Write for prices on what you need—a full line.
The Stover Apiaries, Mayhew, Miss.

Lewis Beeware—Root's extractors, smokers, etc. Dadant's Comb Foundation. Large stock always on hand for prompt shipment. Western beekeepers can save money by patronizing the oldest co-operative association of beekeepers. Illustrated catalog free.
The Colorado Honey Producers' Ass'n.
Denver, Colo.

California redwood hives, one story complete with 10 frames, $1.00; supers with 9 frames, 50c. Discounts, 25, 10 percent, 100, 20 percent. Extracted honey cases, 65c. Dadant's foundation delivered by prepaid freight anywhere. Medium, 52c; thin, 54c; surplus, 50c; bee-supplies at 5 percent off any manufacturers' prices. Catalog free.
Spencer Apiaries Co., Nordhoff, Calif.

POULTRY

For Sale—Wild Mallard Duck—12 eggs, $3.00 Ashmead, Williamson, N. Y.

Partridge Rock Eggs for hatching, $3.00 per 15. Neville Poultry Farm Kewanee, Ill.

For Sale—R. C. and S. C. brown Leghorn eggs. Great layers. Farm raised; 15 for $1.25, postpaid, G. S. Young, Rt. 1, Munson, Pa.

FOR SALE

For Sale—50 colonies of bees in new 10-frame hives. Clyde Marquand,
Deronda, Wis.

Pangburn wants you to write for illustrated circular describing his new foundation fastener, the fastest, easiest handled machine on the market. Invented and mfg. by W. S. Pangburn, Center Junction, Iowa.

For Sale—Honey cases (used) containing two 60-pound cans in good condition in quantities of one hundred, 20 cents per case. Smaller quantities 25 cents. Send us your orders. G. A. Reuter,
411 Rush St., Chicago, Ill.

For Sale or Exchange for honey or beesuplies, 1912 8 H. P. American twin cylinder motor cycle. Cost $240. What's your offer?
Emil E. Nelson, Route 2, Renville, Minn.

MISCELLANEOUS

How many people are there who really know what good Queen Bees are? We suspect that thousands of beekeepers know, so we claim to know, and can sell good queens to all who wish them. The well known three-bands and Goldens. Untested, $1.00 each; $4.25 for six; $8.00 per dozen. Tested, $1.50 each. Full eight-frame hives with untested queens, $5.00 each. Bees in pound packages, $1 25 f. o. b Riverside. Promptness and honest treatment, and of course satisfaction and safe arrival. Do not return dead queens to us; just state it on a postal, and we will return one at once.
Golden Rule Bee Co., Riverside, Calif.

WANTED

Wanted—Bees in lots of 25 to 300 colonies; any style hive. Within 250 miles of Detroit.
A. W. Smith, Birmingham, Mich.

Wanted—Reliable man for 250 colonies run for comb and extracted honey; permanent job. Would prefer man with orchard experience. Write: Hawthorne Farms Co.,
Barrington, Ill.

3-BAND ITALIAN QUEENS

FOR SALE AFTER MAY 1

This stock of bees does get the honey when there is any to get. One untested, $1.00; 6, $5.00; 12, $10.50; 25, $25.50; 50, $46. One lb. of bees with queen, $3.00; 2 lbs. with queen, $5.00. All queens are mated and laying before sending out. No tested queens for sale. The above prices must be doubled when sending queens to foreign lands. If queen arrives dead, send it back and get another or the money. No checks accepted in any case. (My former address was Cato, Ark.)

Address, J. B. ALEXANDER
R. R. No. 1, Jacksonville, Ark.

CARNIOLAN QUEENS

in season. Orders booked now for queens and bees by the pound A few 8-frame colonies for April delivery. Price $9.00 f. o. b. here.

Ask for our Paper "Superiority of the Carniolan Bee". It's free. Get acquainted with the merits of these bees before placing your orders. Carniolans stand cold winters best, breed up fast in spring, are very gentle, and the best of honey-gatherers.

ALBERT G. HANN, CLINTON, N. J.

CLOSING OUT SALE

—OF—

BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" Latest edition, $1.20)	$1.00
"Songs of Beedom" 10 bee-songs—25c	.15
"Honey-Money Stories" (25c)	.15
"Pearce's Method of Beekeeping" (50c)	.30
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c	.30
Muth Bee-Veil (75c)	.60
Danzenbaker Bee-Smoker ($1.00)	.80
	$3.60

Or *all* the above in one order to one address *for only $3.00.* (The retail price of the bunch is $4.95.) Address,

GEORGE W. YORK, SANDPOINT, IDAHO

IT'S A LONG WAY TO TIPPERARY

But it's a short way to success if your colonies are headed with queens from **The J. E. Marchant Bee and Honey Company,** breeders of the highest grade of Island-bred Italian Queens.

Pure mating guaranteed. Prices as following:

	1	6	12		1	6	12
Untested queens........	$1.50	$ 7.50	$12.00	½-lb. Bees....	$1.50	$ 7 50	$12.00
Tested	2 00	10.50	18.00	1-lb. "	2 00	10 50	18 00
Select tested	3.00	15.00	24 00	2 lbs. "	3.00	15.00	27.50
Breeders...... $5.00 and	10.00			3 lbs. "	4 00	21.00	36 00
Extra select breeders.	25 00			5 lbs. "	5.50	27.50	50.00

These prices are without queens.

We will ship from Canton, Ohio, after June 1.

We guarantee safe delivery and a square deal. **Watch us grow.**

The J. E. Marchant Bee & Honey Co.,
Apalachicola, Florida

Untested Italian Queens

For a number of years we have been furnishing Italian queens to our customers, and their words of encouragement have led us to believe that our services are appreciated. Being in touch with many large breeders, we are in a position to furnish untested queens of first quality with but little delay. We can furnish either ordinary leather-colored or bright yellow queens as preferred. Prices as follows:

BEFORE JULY 1.

1 untested................	$ 1.25	Tested Queens $1.75 each
6 "	5.50	
12 "	10.00	

AFTER JULY 1.

1 untested................	$1.00	Tested Queens $1.50 each.
6 "	4 50	
12 "	8.50	

Special prices on larger lots on application.

CAUCASIAN QUEENS

There has been much inquiry for this race of bees. We can fill orders for these queens at the same rates as above.

INTRODUCTORY OFFER

As an introductory offer, we will send you an untested Queen together with a year's subscription to the American Bee Journal for only $1.50 (10 cents extra to Canada). Add 50 cents if Tested Queen is wanted.

We also can furnish nuclei, bees by the pound and full colonies. Prices on request.

Orders are booked as soon as received and filled in rotation. When ordering, however, state approximate date on which you wish queens to come forward, so that we may fill accordingly. Purity and safe arrival guaranteed.

American Bee Journal, Hamilton, Illinois.

NEW ENGLAND BEE KEEPERS

Everything in Supplies

New Goods. Factory Prices.

Save Freight and Express Charges

CULL & WILLIAMS CO.,
Providence, R. I.

Help Advertise Honey
By Putting

EAT HONEY

Stickers on all letters, packages, shipments, etc. Printed in bright red, already gummed. Price postpaid, 500, 20c; 1000, 35c.

American Bee Journal, Hamilton, Illinois

"Scientific Queen-Rearing"

No other book compares with this one written by Mr. G. M. Doolittle. He is an expert in the business. It tells just how the very best queens can be reared. Bound in cloth. By mail, $1.00; or with the American Bee Journal, one year—both for $1.60. In leatherette binding, 75 cents, postpaid; or with the American Bee Journal one year—both for $1.25. Send to the American Bee Journal.

HONEY AND BEESWAX

CHICAGO, March 17.—The market is not active on either comb or extracted. Of the former, there is very little offered and prices remain without material change, ranging from 17@18c per pound for the best grades of white comb, and the ambers are from 2@3c per pound less. Extracted white ranges from 7@9c per pound, with ambers at from 6@7c per pound, with both kinds selling at about 1c per pound higher in a small way where the quality is of the best. Beeswax is steady at from 30@31c per pound.

R. A. BURNETT & CO.

INDIANAPOLIS, March 17.—The demand for extracted honey is good, although there is very little doing in comb honey, but since our last report comb honey has been moving considerable better. The prices remain about the same, as quoted in our last report. No. 1 choice white comb is selling at $3.50 to $4.00 per case; No. 2 at $3.25 per case. Fancy amber at $3.60 Best grades of extracted are bringing 9½@10½c. We are paying 28c cash or 31c in trade for pure average wax delivered here.

WALTER S. POUDER.

KANSAS CITY, MO., March 16.—Our market is almost bare of comb honey. The demand is good. The supply of extracted honey is large, and the demand light. We quote No. 1 white comb honey, 24 section cases, $3.25 to $3.50; No. 2, $3 00. No. 1 amber, $3.25; No. 2, $2.75 to $3.00. Extracted, white, per pound, 7½@8c; amber, 6@7c. No. 1 beeswax, 28c; No. 2, 25c a pound.

C. C. CLEMONS PRODUCE COMPANY.

LOS ANGELES, Mar. 15.—Fancy white honey is now very scarce, but we fortunately have to offer one straight car of fancy water white sage honey at 7¼c. Possibly with offer in hand we could secure a car of white alfalfa honey at 6c, but we are not sure of this. A good supply of light amber alfalfa honey remains unsold, and the market on this grade seems to have reached bottom, being the lowest for many years. The majority of the holders are unwilling to sell at price now obtainable, and prefer to hold for a better figure. We think we could secure a limited quantity at 3⅞@4c. Light amber sage is well cleaned up, but we know of one car to be had for 4⅜c a pound. We would endeavor to execute orders at the above named prices.

HAMILTON & MENDERSON.

NEW YORK, March 18.—Regarding the condition of the honey market, there are no changes whatsoever from the last report. The demand is very light for all grades, and there is a plentiful supply at prices ruling about the same as our last quotations.

HILDRETH & SEGELKEN.

CINCINNATI, March 18.—Conditions in general look more favorable. The demand for extracted honey is improving, however the demand for comb honey is hardly satisfactory. No. 1 white comb honey is selling at $3 50 to $4.00 per case. White clover extracted, sage, and orange blossom from 8@10c a pound. Southern amber and the like have been selling from 5½@7c a pound, according to quality and quantity purchased. We are paying 28c a pound delivered here for choice beeswax and 30c a pound in trade.

THE FRED W. MUTH CO.

DENVER, March 11.—We have nothing to offer in comb honey, but have a good stock of first-class extracted honey, which we are offering at the following local jobbing prices: White, 8½@8¾c per pound; light amber 8@8¼c, and amber strained, 7@8c. We buy beeswax and pay 28c per pound in cash and 30c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

CHARLES MONDENG
BEE KEEPERS' SUPPLIES

MILLIONS OF

Fine Sections

Thousands of Hives, the best ever made of white pine lumber, ready for prompt shipment. Don't miss them. My goods are guaranteed. A trial order will prove it. 200 colonies of Adels and Carniolans. If you want a square deal, send for my Catalog and Price List. I will pay highest market price for Beeswax in trade.

CHARLES MONDENG
146 Newton Ave. North
Minneapolis, Minnesota

The Beekeepers' Review

The Review is now owned and published by the beekeepers themselves; in fact, it is the honey producers' own magazine, wholly devoted to their especial needs. We buy supplies for our subscribers, and help them to sell their honey without cost, there being a department where names of those having honey for sale are listed free of charge. Also, if you have bees for sale, there is a department where we list you without a cent's cost. If you want to buy honey, there is a department where you can be listed without charge. Other departments contemplative. If you have beeswax you want made into foundation, we save you money on that. The fact is, the Review's main object of existence is to help its subscribers. As we own it ourselves, why shouldn't it be?

We are just making a special offer to new subscribers, in as much as we are giving away the last eight months of 1914 to all new subscribers for 1915. Those back numbers contain many valuable contributions not found in any other publication. Just listen to a few, not having space here to mention them all: Beginning with the May number Mr. Adrian Getaz gives his experience on preventing swarming; size of entrance to use; home rearing of queens; short cuts in finding queens and other subjects. You should read this. Then there is a two-page article by Wilder, describing his management of 3000 colonies in 50 yards. The fact is, there are nine articles from Mr. Wilder in those back numbers and more to follow. Those articles are not published in any other magazine. You should read them. Then there are several articles from Pearce, telling of his system of managing bees in the production of comb honey without swarming, with only two visits a year. Would you like to know how it is done? Then there are field notes from Michigan, Tennessee, Iowa, Colorado, telling of things done under different conditions. Those will interest you. Then there is the Secretary's corner; there the National Secretary tells his experience, and "boosts honey." These are just a few of the good things you will receive for your dollar by subscribing for The Review. Besides all this, you will get ALL the fine articles written for the National convention at St. Louis in 1914, and during this year all the papers read at the Denver meeting this month will be published in The Review, and nowhere else. The Review is mighty fortunate in having so much available material in sight. You cannot know too much about your business, and these 20 numbers we are offering you for a dollar will help you wonderfully in your future beekeeping. Address your own paper.

The Beekeepers' Review, Northstar, Mich.

QUICK GERMINATION

SWEET CLOVER SEED

Get our **Specially Treated Hulled Seed** which will germinate 90 percent to 98 percent. A new process. Also causes seed to sprout quickly. Insures a better stand with less seed per acre than ordinarily used. Samples on application.

	1 lb.	10 lbs.	25 lbs.	100 lbs.
White Sweet Clover (unhulled, hand screened)	20c	$1.80	$4 00	$15.00
" " " (unhulled, recleaned)	25c	2.25	5.00	18.00
" " " (hulled, recleaned)	35c	3.00	6,75	25.00
Yellow " " (hulled, recleaned) M. officinalis	25c	2.30	5.50	20,00
Alsike Clover Seed (hulled	25c	2.00	4.50	17 00

SPECIAL PRICES ON LARGE QUANTITIES

The recleaned seed is machine cleaned, and is free from chaff, dirt, and light seed. All seed f. o. b. Hamilton, or Keokuk, Iowa at the above prices. No charge for bags.

DADANT & SONS, HAMILTON, ILLINOIS

YELLOW SWEET CLOVER—Many people fail to recognize the value of Yellow Sweet Clover as a honey plant. The fact that it blooms two weeks earlier than the White variety makes it especially valuable to the beekeeper. Be sure however, to get the *Melilotus officinalis* as quoted above.

Queens and Bees

Our queens and bees are from the best imported Italian stock. Unexcelled for gentleness and honey. Ready April 1.

One untested queen, 75c; 6, $4.25; 12, $8.00. ½ lb. of bees, 90c; 1 lb., $1.25. If a queen is wanted with the bees, add the price. Safe arrival and satisfaction guaranteed.

N. FOREHAND & CO.,
Ft. Deposit, Ala.

DO YOU READ THE

Progressive Poultry Journal?

If not, send for a Sample Copy. An up-to date poultry paper. Every Beekeeper should keep Poultry. Write for advertising rates.

Progressive Poultrv Journal Publishinng Co.,
MITCHELL, SOUTH DAKOTA

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

Leather Colored Italians

About April 1st. I will again be ready to mail untested queens of my fine strain of Italians; I breed no other race. I also have choice tested and breeding queens at all times. Get your orders booked early.

I rear only the kind of queens that are sought for and demanded by successful beekeepers. Get your orders booked early. Cash with order. Satisfaction guaranteed. Untested queens, $1.00 each; $9.00 per doz.; $75 per 100. Choice tested, $1.50 each; $15 per doz. Breeders, $3.00 to $5.00 each.

C. S. ENGLE
Beeville, Bee Co., Texas

Weber Service!

At this time of the year it is especially important that the Beekeeper be able to secure his supplies without delay. With the promise of an early spring and a heavy honey-flow this is doubly important.

Root's Goods and Weber Service

IS A COMBINATION THAT IS HARD TO BEAT

We have a reputation for prompt delivery and quick service. Being located in Cincinnati, the gateway of the South, we can save you considerable in transportation charges.

Our 1915 catalog will be promptly mailed to any one interested.

C. H. W. WEBER & CO.,

2146 Central Avenue, Cincinnati, Ohio

A Glimpse Behind the Scenes

While the majority of Beekeepers are familiar with the Root honey extractors, smokers, wax presses, foundation mills, swarm catchers, queen excluders, queen and drone traps, etc., and have used these for many years, there are not many who have had the opportunity of seeing these manufactured, and they do not, therefore, realize the number of operations required before the finished product is finally turned out and the many and costly machines needed. For the benefit of these we show the accompanying illustration, showing only a corner of one of the three Departments devoted entirely to the manufacture of this class of goods, which will give the reader a faint idea of some of the machinery employed in the manufacture of our metal goods, which have achieved a world-wide reputation, so much so that today the Root Honey Extractor is used almost exclusively all over the world, while nearly all of the foundation now used is made with our foundation mills.

Partial view of the machine shop, one of the three Departments devoted to metal goods

Root's Goods are a synonym for perfect workmanship and the best of raw material.

THE A. I. ROOT COMPANY, Executive Offices and Factory, MEDINA, OHIO

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MARSHFIELD GOODS

BEE-KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. The CHEAPEST for the Quality ; BEST for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

EARLY ORDER DISCOUNTS WILL
Pay You to Buy Bee Supplies Now

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustratedcatalog today.

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START THE SEASON RIGHT

By using **Dittmer Foundation** the bees like it for it's made to just suit them, and is just like the Natural Comb they make themselves.

Send for prices on having your Beeswax made into Comb Foundation, which includes all freight charges being paid.

All other Supplies in stock

Gus Dittmer Company, Augusta, Wisconsin

IMPORTED AND HOMEBRED
CAUCASIANS and CARNIOLANS

First importer of these races from their native lands; 31 years' experience with Carniolans, 12 with Caucasians; resided and traveled in Carniola, Austria four years, giving my whole time to queen rearing; spent several months in bee explorations in the Caucasus, Russia. Untested queens, $1.00; five for $4.00. Tested, $2.00 each; all from select mothers imported direct from apiaries personally inspected by myself. Imported queens $5.00 and upward. For Japan, Australasia, and South America add one-half to above prices. Safe arrival guaranteed anywhere in the world.

Ten percent discount for prepaid orders now.

FRANK BENTON
Cherrydale Station, Washington, D. C.

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To learn the truth about a country you want to read the agricultural paper which the growers of that country read, and THE FLORIDA GROWER, published at Tampa, Florida, is Florida's one agricultural weekly. It is unique in the agricultural field. It carries more advertising than any agricultural paper in the country; it has a more interested body of readers; it is instructive and entertaining. Sample copy free or 50 cents for a four months' trial subscription. 50 cents back if notsatisfied.

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Successor to Northwest Farm and Home
69 YEARS OLD

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Send One dollar and have the magazine sent for one year. Cut rate of one-half price now on.

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Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description. Shipping-cases, Section-holders, Comb-foundation, Smokers, etc.
Get my prices before placing your orders.

R. H. SCHMIDT
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BEE SUPPLIES

Best Sections, Best Shipping Cases
Best of all Supplies

Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready now. Send your name and get one.
H. S. DUBY & SON, St. Anne, Ill., carry a full line of our goods.

AUG. LOTZ CO. BOYD, WIS.

The Bee-Supply Season is Here—We are Ready for Your Bee-Supply Orders

DON'T FORGET HERE IS THE ONLY PLACE YOU CAN GET

MUTH

SERVICE
QUALITY
SPECIAL HIVE

THE NEW MUTH 1915 CATALOG
Send for it—Watch for it—Wait for it

It is now out. If you have not received your copy, send for same at once. It is free for the asking. Everything you need is there—HIVES—BROOD FRAMES—FOUNDATION—SECTIONS—SMOKERS—BEE-VEILS—BRUSHES, Etc., Etc.

The Fred W. Muth Company

"The Busy Bee Men"

204 Walnut Street, - CINCINNATI, OHIO

P. S.—Ship us your old combs and cappings, and let us render them for you. Our process extracts the last drop of wax from the slumgum. This means money for you. Write for full particulars.

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

Rendering Combs

Cappings or slumgum is a "mussy" job at best. We are equipped for this work, and will render yours for you on shares. Send for our terms. For your share of the wax we will either pay you cash, ship you goods in exchange or manufacture it into

Dadant's Foundation

Known and liked the world over because it is just like the combs the bees make themselves.

Bee Supplies

We carry a large stock of all kinds of bee supplies. Drop us a card, making known your wants. We guarantee satisfaction in every way.

DADANT & SONS,
HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

MAY

1915

Mass. Agri. College Lib.
Amherst, Mass.

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec15" on your label shows that it is paid to the end of December, 1915.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

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Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Dominion of Canada, Department of Agriculture, Central Experimental Farm.
OTTAWA, Sept. 5, 1913
Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.
(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct 7, 1913.
Your queen arrived in first-class condition, and introduced her without any difficulty.
(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n
ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

Bee-Supplies

LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

"Griggs Saves You Freight"

TOLEDO

"Griggs Saves You Freight"

Now for 1915 Supplies

We want every beekeeper to have our FREE illustrated catalog of everything used by beemen, also our special price-list of

POULTRY FEEDS

If **quality, prices** and **service** count with you, together with saving in **freight.** Don't order your supplies until you have it.

We use large quantities of Beeswax and Honey.

Do You Wish Pure Maple Syrup?

We have it and the best made, too, $1.50 per gallon.

S. J. GRIGGS & CO. Dept. A, Toledo, Ohio

Griggs is on the job.

INCREASE THE YIELD OF YOUR FARM

The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

Everybody knows that by following the Campbell System of Soil Culture, crop yields have been doubled in every State of the Union from New York to California. Why not learn what the principles of the Campbell System are and adopt them? You can get all this and a thorough agricultural education without leaving home by taking a course in the

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You can have your choice of eight courses, Soil Tillage, Soil Improvement, Small Farming, Horticulture, Irrigation, Dry Farming, Farm Engineering and Animal Husbandry, all for a nominal tuition fee, no board to pay, no books to buy, everything furnished, and you can use your spare time while still running your farm or holding your job.

We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad, but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

Campbell Scientific Soil Culture Company Billings, Montana

THREE-BANDED ITALIANS—GET THE BEST

Twenty years of breeding and selection has resulted in an exceptionally vigorous and long-lived strain of bees, unexcelled for gentleness, prolificness and honey-gathering qualities. No disease.

	Before May 1st			After May 1st		
	1	6	12	1	6	12
Untested	$1.25	$ 6.50	$11.50	$ .75	$4.00	$ 7.50
Tested	1.50	8.00	15.00	1.25	6.50	12.00
Select tested	2.00	10.00	18.00	1.50	8.00	15.00
1-lb. pkg. bees	2.00	11.00	21.00	1.50	9.00	18.00

Breeders, $5.00 each, any time.

Safe arrival and satisfaction guaranteed on all queens to all points in United States and Canada. Queens for export are carefully packed in export cages; but safe arrival is not guaranteed. Bees by the pound guaranteed within six days of Mathis, Tex. If queen is wanted with bees by the pound, add price of queen wanted to price of bees. Better let me book your orders now.

H. D. MURRY, MATHIS, TEXAS

Beekeepers' Supplies

Write us for our 64 page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

J. NEBEL & SON SUPPLY CO.,
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WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.

J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

Wanted

Choice Grades of EXTRACTED HONEY

Send Sample and State Quantity

How packed and the lowest price you will take

We are always in the market for **Beeswax,** and pay highest market prices.

Hildreth & Segelken
265-267 Greenwich St., New York, N. Y

TRY MY FAMOUS QUEENS

From Improved Stock

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, 1, $1.00; 6, $5.00; 12, $0.00; 25, $17.50; 50, $34; 100, $65 Tested, 1, $1 50; 6, $8 00; 12, $15.00. Breeders of either strain, $5.00. Nuclei with untested queen, 1-frame, $2 50; six 1-frame, $15 00; 2 frame, $3 50; six 2-frame, $20.40; nuclei with tested queen, 1-frame, $3.00; six 1-frame, $17.40; 2 frame, $4.00; six 2-frame, $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

BUCKEYE CHAFF HIVES DOVETAILED HIVES

Sections, Comb Foundation

Choice Northern-Bred Italian Queens

Bees by the pound

General Agents for Root's Goods in Michigan

SEND FOR 1915 CATALOG

M. H. HUNT & SON
Lansing, Mich.

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate; purest of the pure.

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

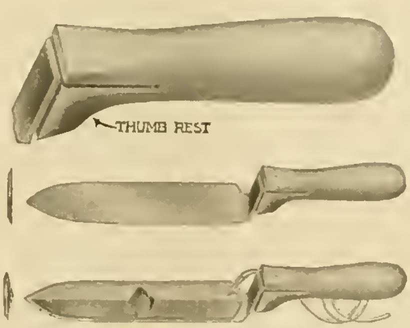
Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
Box 389 - Beaumont, Texas

Bingham Honey Uncapping Knives

With the New Improved COLD HANDLE

Standard length, 8½ inch, each.	$ .75	Ship weight, 15 ounces
Extra long 10 " "	.85	" " 10 "
Steam heated with 3 ft. tubing each....	2.50	" " 24 "



Our knives are made of the best razor steel, and we could produce them at least 10 cents per knife cheaper by using inferior material. Mr. W. W. Culver, of Calexico, Calif., writes "We have had difficulty in getting Bingham Knives, such as we are accustomed to; that is, a light flexible knife that will give some in moving over the comb. If you can furnish such a knife, send two standard and one steam knife. If the steam knife suits me I will want about three." This is just the kind of knife we furnish; the kind Mr. Bingham furnished years ago before others crowded him out with their inferior substitutes We know because we have kept bees nearly 40 years. Old timers will again find what they want in our Bingham Knife.

A. G. WOODMAN COMPANY,
Grand Rapids, Mich.

SECTIONS "GOOD ENOUGH" BRAND

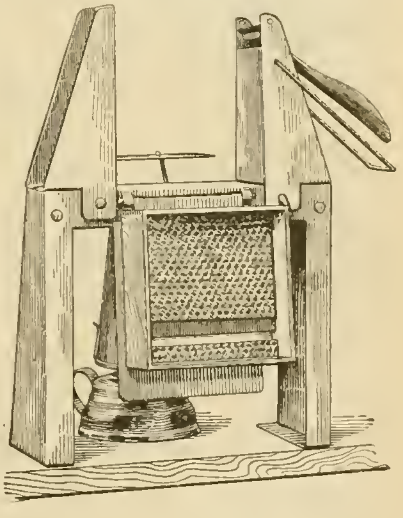
By eliminating the expense of grading and inspection, we are enabled to put on the market this special brand of Mill Run Sections at low prices, in addition to our regular Lewis Brand stock.. They are made by the best machinery, and undergo the same process of manufacture, such as sanding, polishing, etc., as the highest priced sections on the market, but no attempt is made at grading, and they include both the first and second grades. Sold only by the crate of 500 We have them only in the following sizes this season: 4¼x4¼x1⅞ beeway, 4¼x4¼x1½, and 4x5x1⅜ plain. The stock on hand is fine and it will please you. Write us for prices on large quantities. Many orders for these sections are arriving some as high as 25,000, and all are pleased A trial order will convince you they are **good enough.**

500 in crate	$2.50	5000 to 9500, per M	$4 25
1000 to 4500, per M	4.50	10,000 or more	4.00

A. G. WOODMAN CO., Grand Rapids, Mich.

Woodman's Section-Fixer

A combined Section Press and Foundation-fastener of pressed steel construction



WHITE CITY, KAN., March 11, 1915.
Dear Sirs:—I ordered one of your section fixers and a hive tool, and would say that it beats anything I have ever used heretofore. It is a fast machine and a labor saver.
CHAS. SHELDON.

ROCHESTER, WASH., April 12, 1915.
A. G. WOODMAN Co —The Section Fixer received in good condition, and does fine work after a little use. It will pay for itself in a short time. Yours truly, L. R. BOAMSNESS.

DEFIANCE, OHIO, April 5, 1915.
Gentlemen:— P S. to a second order). Thought we had a good fixer, but not in it with yours, the best I have ever seen. I demonstrate before they go out; haven't had a bit of trouble, and expect to sell a good many. Respectfully,
E. M. COLWELL.

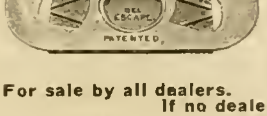
REDFORD, KY., Jan. 12, 1915.
A. G. WOODMAN CO.—Please send me your best prices on bee-supplies. I have one of your section fixers and will say it is the best I ever saw. I would not be without it for twice what it cost me. Hoping to hear from you soon. Truly yours, ROBERT W. HALL.

Price with lamp and one form, $2.75. Without lamp, $2 50. Shipping weight, 5 lbs. postage extra. Send for special circular. 10 illustrations.

A. G. WOODMAN CO., Grand Rapids, Michigan

PORTER BEE ESCAPE

SAVES
HONEY
TIME
MONEY



For sale by all dealers.
If no dealer, write factory
R & E. C. PORTER, MFRS.
Lewistown, Ill., U. S. A.

3-BAND ITALIAN QUEENS

FOR SALE AFTER MAY 1

This stock of bees does get the honey when there is any to get. One untested, $1.00; 6, $5.00; 12, $10.50; 25, $25.50; 50, $46. One lb. of bees with queen, $3.00; 2 lbs. with queen, $5 00. All queens are mated and laying before sending out. No tested queens for sale. The above prices must be doubled when sending queens to foreign lands. If queen arrives dead, send it back and get another or the money. No checks accepted in any case. (My former address was Cato, Ark.)

Address, J. B. ALEXANDER
R. R. No. I, Jacksonville, Ark.

That neighbor of yours and yourself did you both get copies of our Catalog?—If not, a postal will bring it to you both, free for the asking

Now, for about forty years "**Falcon**" **Quality** has stood beside our customers. It's nothing unusual to get letters from customers saying, "We have been purchasing our supplies of you for twenty-five years, and find them entirely satisfactory in every respect." Then, again, some of our newer customers ask us to send them copies of our Catalog, as they have given our Catalog to a neighbor. It goes to show A SATISFIED CUSTOMER IS OUR BEST ADVERTISEMENT.

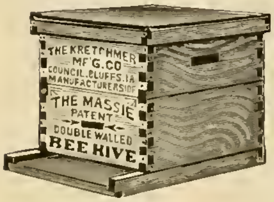
RED CATALOG, Postpaid - "Simplifed Beekeeping," Postpaid

DEALERS EVERYWHERE

W. T. Falconer Mfg. Co., Falconer, New York

Where the good bee-hives come from

The Double-Walled Massie Bee-Hive


THE KRETCHMER MFG.CO COUNCIL BLUFFS IA MANUFACTURERS
THE MASSIE PATENT
DOUBLE WALLED BEE HIVE

THE MASSIE HIVE
For Comb or Extracted Honey

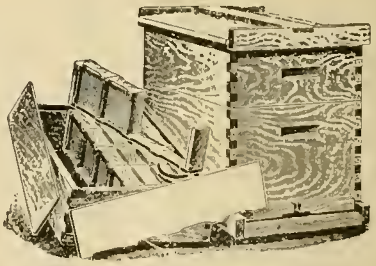
Surest Protection for Bees—Increased Supply of Honey—The Best Hive for any Climate

Furnished in the clearest of lumber in either Cypress, White Pine or Redwood
All Brood and Extracting Frames Made from White Pine

THE MASSIE VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance for swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE** is **the very best hive,** and testimonials to this effect are received daily from those who are using this hive.



The Dovetailed Hive for Comb Honey

WHY NOT GIVE US A TRIAL ORDER? SATISFACTION FULLY GUARANTEED

We are also extensive manufacturers of **Dovetailed Hives** and **all other Apiarian Supplies.** If you are in the market for supplies be sure to get our prices before buying elsewhere. We will mail our large illustrated catalog and **special price list** to any one upon request.

KRETCHMER MFG. CO., COUNCIL BLUFFS, IOWA

CLOSING OUT SALE
—OF—
BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.35
Danzenbaker Bee-Smoker ($1.00)	.80

GEORGE W. YORK, SANDPOINT, IDAHO

ITALIAN QUEENS NORTHERN BRED

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents; "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, GLENWOOD, MICH.

BEES! BEES!

I can fill your order for bees and queens immediately. One-pound cage bees, $1.50; two-pound cage, $2.50. Two-comb nucleus, $2.75; three-comb nucleus, $3.75. One dollar extra for untested queen. Select tested 1914 queen, $2.00. 5 percent discount on orders for six or more.

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FREE!

Our new Bee Book of 68 pages—150 illustrations, is just off the press. Contains valuable information for beginners in bee culture, as well as for expert bee-keepers. We have everything for the apiary, including the bees. We ship same day order is received.

BLANKE MFG. & SUPPLY CO.,
209 Washington Ave., St. Louis, Mo.
Established 1899

IT'S A LONG WAY TO TIPPERARY

But it's a short way to success if your colonies are headed with queens from **The J. E. Marchant Bee and Honey Company,** breeders of the highest grade of Island-bred Italian Queens.

Pure mating guaranteed. Prices as following:

	1	6	12		1	6	12
Untested queens	$1.50	$ 7.50	$12.00	½-lb. Bees	$1.50	$ 7.50	$12.00
Tested	2 00	10.50	18 00	1-lb. "	2.00	10.50	18.00
Select tested	3.00	15.00	24.00	2 lbs. "	3.00	15.00	27.50
Breeders...... $5.00 and	10.00			3 lbs. "	4.00	21.00	36 00
Extra select breeders.	25 00			5 lbs. "	5.50	27.50	50.00

These prices are without queens.

We will ship from Canton, Ohio, after June 1.

We guarantee safe delivery and a square deal. **Watch us grow.**

The J. E. Marchant Bee & Honey Co.,
Apalachicola, Florida

Untested Italian Queens

For a number of years we have been furnishing Italian queens to our customers, and their words of encouragement have led us to believe that our services are appreciated. Being in touch with many large breeders, we are in a position to furnish untested queens of first quality with but little delay. We can furnish either ordinary leather-colored or bright yellow queens as preferred. Prices as follows:

BEFORE JULY 1.

1 untested	$ 1.25	Tested Queens $1.75 each
6 "	5.50	
12 "	10.00	

AFTER JULY 1.

1 untested	$1.00	Tested Queens $1.50 each.
6 "	4 50	
12 "	8.50	

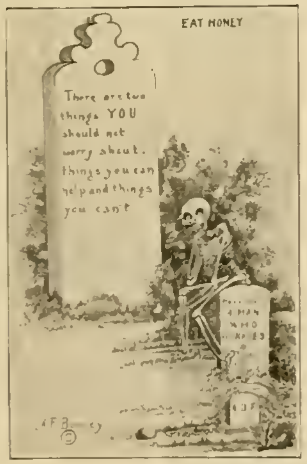
Special prices on larger lots on application.

CAUCASIAN QUEENS

There has been much inquiry for this race of bees. We can fill orders for these queens at the same rates as above.

American Bee Journal, Hamilton, Illinois

EAT HONEY


EAT HONEY
There are two things YOU should not worry about. things you can help and things you can't
A MAN WHO

Advertising post cards. Original. Unique. Copyright. By the dozen or hundred. Samples 2 cents each. Six designs.

Dr. BONNEY, Buck Grove, Iowa

BEES and SUPPLIES

If you are in need of bees, queens, or apiarian supplies and want the best at a reasonable price, send for our catalog. 8 and 10 frame chaff hives, full colonies, nucleus colonies, or bees by the pound, shipped promptly. Tested Italian queens $1.50. Untested, $1.00.

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APIARIES: Glen Cove, L. I.

NEW ENGLAND BEE KEEPERS

Everything in Supplies

New Goods. Factory Prices.

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CULL & WILLIAMS CO.,
Providence, R. I.

HONEY AND BEESWAX

CHICAGO, April 16.—The market has cleaned up on comb honey to a degree that is seldom reached at this time of the year, and we believe this is not only true of Chicago, but of every large market in the country. Therefore, the coming crop should meet with a good demand, and prices quite as high as the market closed at, for of late white comb honey has sold at 17@18c per pound without allowing for the weight of the wood attached. A little fancy brought 20c per pound without allowing for the weight of the wood attached. The fact of all grades of comb honey having been consumed should open the way for a free outlet of this coming harvest even though it prove to be a bumper one.

Extracted honey, on the contrary, is in abundance, and the lower grades are very difficult to sell. White clover and basswood has been used up and commands 9c per pound in our market now, but other white grades are selling at 7@7½c per pound while the ambers can be bought freely at 6c per pound, and off flavors at a still lower price. Beeswax is steady at 30@31c per pound.

R. A. BURNETT & CO.

KANSAS CITY, MO., April 17.—Our market is about bare of comb honey, with considerable inquiry. The supply of extracted is large, with a very light inquiry, more especially for the dark grades. We quote: No. 1 white comb honey, 24 section cases, $3.50 to $3.60; No. 2, $3 25 to $3 35. No. 1 amber, $3.25 to $3.40. No. 2, $2.75 to $3.00. Extracted, white, per pound, 7½@8c; amber, 5@7c. Beeswax, 25@28c.

C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, April 17.—The demand for comb honey is very quiet. There is a fair demand for extracted honey, and the prices are about the same as in our last report. No 1 choice white comb is selling at $3.50 to $4.00 per case. Best grades of extracted are bringing 9½@10½c. We are paying 28c cash, or 30c in trade for pure average wax delivered here.

WALTER S. POUDER.

CINCINNATI, April 19.—Business is not good in the honey line, although the demand is looking up somewhat. We quote No. 1 comb honey at $3 75 to $4.00 per case, and extracted amber at 5½@7c, and white from 8@10c a pound. We are paying 28c a pound cash for beeswax or 30c a pound in trade.

THE FRED W. MUTH CO.

DENVER, April 10.—We have nothing to offer in comb honey, but have a good stock of first-class extracted honey, which we are offering at the following local jobbing prices: White, 8½@8¾c per pound; light amber 8@8¼c, and amber strained, 7@8c We buy beeswax and pay 28c per pound in cash and 30c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

NEW YORK, April 10.—There is practically nothing new to report. The market is in a weak condition, the demand not being up to former years either on comb or extracted, and quotations in general are nominal. There is some demand for No 1 and fancy white at around 14@15c, while off grades are are neglected altogether. Extracted is quiet in all grades, with the exception of fancy white clover, which seems to be somewhat scarce. Beeswax is firm at from 29@30c per pound.

HILDRETH & SEGELKEN.

CAUCASIANS and CARNIOLANS

First importer of these races from their native lands; 31 years' experience with Carniolans, 12 with Caucasians; resided and traveled in Carniola, Austria four years, giving my whole time to queen rearing; spent several months in bee explorations in the Caucasus, Russia. Untested queens, $1 00; five for $4 00. Tested, $2.00 each; all from select mothers imported direct from apiaries personally inspected by myself. Japan, Australasia, and South America add one-half to above prices. Safe arrival guaranteed anywhere in the world.

FRANK BENTON
Cherrydale Station, Washington, D. C.

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Writers of the above six testimonials are many of them prominent in the beekeeping world, and their names will be furnished on application.

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AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR C. C. MILLER, Associate Editor.

HAMILTON, ILL., MAY, 1915

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EDITORIAL COMMENTS

Spraying in Massachusetts

The State Board of Agriculture of Massachusetts has issued a fine poster in colors for the information of fruit growers, advising them to spray their fruit trees and warning them against spraying during bloom. Such a poster, issued by each State Board of Agriculture, would do much good. We quote one of its recommendations:

> "Never allow your trees to be sprayed while the large pink or white blossoms are still on them, for the job will not be so well done; less fruit will be set, and many bees may be killed. Spraying just after the blossoms have fallen gives better protection from the apple worm, saves the bees and sets more fruit."

The Southern Hemisphere

The New Zealand Farmer for March contains interesting articles on "Water Content of Honey," Statistics on Export, "Forty Years of Beekeeping in New Zealand," by I. Hopkins, and a number of other valuable items interesting to beekeepers. It seems a little strange to us, on the north side of the equator, to read of their fall crops and winter preparation in March, April, and May.

Sections from Which the Combs Have Been Cut

Unfinished sections from which the bees have emptied the honey in the fall, if in perfect condition, are a valuable asset for use in the next summer. From this it would seem a pretty safe guess that if the sections be cut out, leaving the margin of the comb on all sides, the bees would use them in a satisfactory manner. But one is not always safe in guessing, and submiting a thing to the bees may tell a different story. According to the experience of W. S. Pangburn, using such sections is not a success—at least not always. He says:

> "In filling some supers I was short a few sections. Having a few nice clean ones from which we had used the honey, and which had from ⅛ to ¼ inch of comb still remaining on all four sides, I placed one of these in the center of probably six supers, the rest of the sections being filled *a la* Miller, which, by the way, is the only way I have been able to produce a fancy and No. 1 article, and I have tried all ways, *I guess*. Imagine my surprise on running these supers to find perhaps one-half of these sections just as I put them on, with the balance of the super completed.
>
> "Strange, isn't it? But, after all, bees, like people, do strange things sometimes and keep us guessing why. It wasn't a success with me this year on a small scale. Next year it might work, but, then, I don't know.'"

Observing Hives

The reader will kindly refer to Dr. Miller's "Question and Answer Department," and read the paragraph entitled, "First Queen Destroys Other Cells." It is that paragraph which prompts the present editorial on "Observing Hives."

Many people imagine that an observing hive may be made by using glass instead of wood in the side or end walls of an ordinary hive. But a true observing hive is one in which no part of the brood-chamber is hidden from the owner. The right kind of observing hive—and every beekeeper ought to use one—is made with only one frame with glass on both sides. Such hives are sold by many dealers or they may be made at home very cheaply. During the latter part of this month, in our northern countries, or in early June, is the proper time to supply such a hive with bees. Go to a strong colony and take out one of its center combs with plenty of bees, with or without the queen. By placing it in the observing hive and keeping it about 48 hours in the cellar we will have a little colony which may be set before a window with a tube for the bees to reach the outside. Or it may be put in a corner of the back porch, or in the yard, on a stand sufficiently raised that we may sit by it on a chair and spend hours watching the bees at work. Both sides should be available. We will see the queen lay, and when she is removed we will see the bees rearing queen-cells.

If we wish to rear queens in it, the little colony must be made strong by shaking young bees in front of it. Bees that have never yet taken a flight will remain where put, and we may thus obtain a little colony so strong that it will rear as good queen-cells as the best of our colonies. There is no end to the pleasure and information to be derived from such a hive, and you will entertain not only the members of the family but visitors as well. None of the "mysteries" of queen-rearing will be hidden from you, and you will be able to verify many of the statements made by authorities of the natural history of the honey-bee. Many of the experienced beekeepers have used these observing hives season after season. The cost is small and the pleasure great. If well cared for and well ed, a colony of this kind may produce two or three queens in a season and more than pay for all the trouble. But to rear good queens in it, we must have it strong in bees.

Even through the neglect of its owner, an observing hive may teach us lessons, if we will only examine the behavior of its bees in all circumstances. A hopelessly queenless hive of this kind will give us the spectacle of drone-laying workers whose existence we have known some really good beekeepers to doubt.

When the summer is ended the bees of the observing hive may be united to any colony in the apiary, unless we wish to try upon it some of the problems of wintering.

Beekeeping in Canada

Morley Pettit is still doing things across the border, in spite of the war and the bad season of 1914. He reports that the average crop for the province of Ontario "was about 16 pounds per colony as opposed to an average of over 100 pounds per colony in 1913." There were 541 beekeepers engaged in co-operative experiments with instructions and material sent out by Mr. Pettit, and the experimenters reporting on their crops had an average of 35 pounds per colony. The significance of this seems to be that the wide-awake and-up-to-date men who are getting twice as much as the general average are the very ones who are eager for light to do better. "To him that hath shall be given."

The experiment for the prevention of natural swarming in the production of extracted honey resulted in reducing swarming to 5 percent instead of 35 percent with an increase of the average yield per colony.

It appeared to be "a great advantage to give the queen an extra brood-chamber of empty combs for a week or two before the opening of clover flow, provided the colony is strong enough to need the extra space." Also "that it pays to give hives extra protection when they are taken out of the cellar early in the spring. The extra warmth so obtained is of great value to them in the early brood-rearing. (It would be interesting to know how early the taking out would have to be to make the extra protection pay.)

Arthur C. Miller's smoke method of introducing a queen to a full colony proved entirely satisfactory with two-thirds of the experimenters.

To each of of 106 applicants an untested Italian queen purchased from some reliable queen-breeder was sent, the queen to be tested as to her efficiency in struggling against European foul brood. Later reports were received from 36 that the queens had been successfully introduced (presumably into affected colonies), and that the colonies were going into winter quarters in good condition. The report states:

> "In all there are 7222 colonies of Italian bees, 5422 crossed Italian and black bees, and the balance, 2846, are principally common black bees. This shows a marked gain in the number of Italian bees kept."

Wonder if Mr. Pettit would make his affidavit that among those 2846 there are 100 sure enough simon-pure blacks. If so, pure stock of that sort is probably easier to find across the line than here.

C. C. M.

Co-operation

In that article on page 129, Mr. Rauchfuss, acting for the association of which he is secretary, has done a very unselfish thing. He has given away all the secrets of their success, upon reading which one is inclined to say, "And why shouldn't they succeed?" And the question arises, "What is there to hinder others to succeed in the same way?" The plans that have been such a great success in Colorado are not patented, why have they not been adopted elsewhere? It looks as if they might be. To be sure, the personality of the manager is a large factor, and a Frank Rauchfuss is not to be found growing on every tree, but now that the program has been so plainly made out it is to be hoped that the right man may be found in other places, and that we shall hear of the same success being repeated elsewhere.

C. C. M.

What is Old Comb Worth Per Pound?

That is a very difficult question to answer as it depends upon how much pollen or perhaps honey it contains.

Very old combs cut from the bottom of the brood-chamber might not contain more than 10 percent of beeswax. Usually the honey in them has been taken out by the apiarist or robbed out by the bees. But at times such combs contain a large amount of pollen which is only dead matter when comes the rendering into wax. The upper part of the combs is always richer in beeswax because it is reinforced every year with new wax at the time of the honey harvest. This is readily proven when we see the bees whitening their combs, which is simply adding new wax. In a similar way, the extracting combs are every season strengthened so that they become tougher and tougher, even though no brood is reared in them. Even the section boxes have their combs reinforced when they are used the second season after a failure to fill them and seal them fully the first year.

The lighter the combs are the greater the percent of pure wax in them; such combs as have been used only one or two seasons, if clean, might contain 90 to 95 percent of beeswax.

Owing to these facts and the irregularity of old combs it is impossible to answer the question of how much old combs are worth per pound, especially as the beeswax which they contain has itself a fluctuating value. However we can say that brood combs of Langstroth size contain from 3 to 5 ounces of wax in ordinary circumstances. When the value of beeswax is known it only remains to figure the expense of extracting it to reach the value of the combs.

The older the combs of the brood-chamber, the more cocoons they contain and the more difficult it is to extract the wax, as more of it will be absorbed by the residues than in new combs or in super combs containing mainly beeswax.

Much of the wax rendered at the beekeeper's home is only partly secured from the slumgum, owing to the lack of proper devices or because too little time is taken. The methods used by some apiarists are so crude that I have often heard old beekeepers say that no wax can be obtained from black combs. This is true when the work is attempted with a solar extractor. We are steadily coming to the European custom of leaving to specialists the rendering of the wax from the combs, with profit to all concerned.

C. P. D.

Foulbrood Insurance

Dr. E. F. Phillips, of the Bureau of Entomology, and in charge of the Apiary work, who is well-known to our readers, sends us a copy of the Monthly Bulletin of the International Institute of Agriculture, containing a relation of Swiss insurance against foulbrood. We have made mention of this insurance in the "Notes from Abroad" for September last, page 306. The beekeepers of German Switzerland have a voluntary organization for this purpose, and the cost per colony is one cent per annum.

The Swiss Federal Government has declared foulbrood an infectious disease, but it has left to the Cantonal Governments the authority for regulations and laws concerning it. So each Canton has its own law, just as our States have. In the French Cantons, Fribourg, Vaud, Neuchatel, compulsory foulbrood insurance has been established, but the cost of this has been much greater than in the voluntary organization of German Switzerland, amounting to about 30 centimes or 6 cents per colony annually. This is due to various causes, the main one being very probably that this was established later and that a greater amount of disease was in existence. Quite a little dissatisfaction has been caused by this.

Whether our own people ever consider it advisable to organize insurances against this disease, we wish to warn them against allowing it to run too long without control. The quicker measures will be taken against foulbrood, the easier it will be to eradicate. Concerted action is necessary. Laws should be passed and enforced in every State. Much has been done already, but much remains to be done.

MISCELLANEOUS NEWS ITEMS

Watch Out for Robbers.—Use every precaution and watchfulness to prevent robbing. Do not under any circumstances leave combs of honey out for the bees to clean up. On account of the prevalence of disease in unexpected places, it is never wise to feed honey to bees, and where disease is known to exist it is the worst of folly—MORLEY PETTIT, Provincial Apiarist, Guelph, Ont.

This is good advice for everybody to follow wherever bees are kept.

◆

Women Keeping Bees.—To the young wives of soldier beekeepers who have to do the home work during the absence of their husbands at the front, Mr. Mothré, in "L'Abeille Bourguignonne" (French) gives some very seasonable advice on how to care for the bees in the husband's absence. Thousands of apiaries, in stricken Europe, must now be cared for by the women, while the men are mowed down in a senseless war.

◆

Should Be Good Location for Bees.—During the past year the acreage of alfalfa in Allen Co., Kan., has been raised from 2000 to 5000 acres, and more than 2500 acres to sweet clover has been planted where it was never grown before.—*Exchange.*

◆

South Dakota.—The annual report of L. A. Syverud, Bee Inspector of South Dakota, is at hand. After giving a general idea of the work done, Mr. Syverud gives considerable prominence to the value of sweet clover as a honey plant. He considers it one of the best honey plants of the State.

◆

Bees for Farm Women.—Report No. 103 of the United States Department of Agriculture, deals with "Social and Labor Needs of Farm Women." Beekeeping is one of the pursuits advised for farm women. A list of Government bulletins on beekeeping available for free distribution is given in connection.

◆

Crop Conditions.—Bees here came out of winter very weak, but the prolonged warm spell has had a remarkable effect. Danger of spring dwindling is fast disappearing, under the stimulant of a light honey flow from fruit bloom.

◆

Beea Not a Nuisance.—We give herewith the salient parts of the report published in 1890, on the above subject, by Thomas G. Newman, then General Manager of the National Beekeepers' Union, mentioned on page 135 of the April number:

"To show the value of united action, and the moral weight of the backing of the National Beekeepers' Union, we will make a brief enumeration of the outcome of all the suits against beekeeping in the United States, which the Union deemed it expedient to defend, and it will be seen that not one has been decided against the bees.

"The 'Freeborn' case in Wisconsin was presented in such a manner, backed by the Union, that the judge threw it out of court.

"In the 'Bohn' case, in California, the united resistance of the beekeepers of the National was too much for the fruit-growers, and that trouble is now all conquered, the raisin-growers admitting that they were mistaken.

"The 'Darling' case in Connecticut was dismissed as soon as it was discovered that he was 'backed up' by the National Beekeepers' Union.

"The 'Richardson' case in Indiana was dismissed by the court.

"The case of 'S. W. Rich,' of New York, was a suit by a disagreeable neighbor, to compel the removal of his home apiary outside of the city limits. He also sued for $1200 as damages for injuries inflicted by the bees upon his person and property. The jury from which every person having bees was excluded, gave him but *six cents* to cover wounded feelings and damaged property.

"The CROWNING VICTORY was obtained in the Arkadelphia case, in Arkansas. There by the enforcement of an unlawful ordinance of the city, Mr. Clark was deprived of his liberty and the constitutional rights guaranteed to every citizen of the United States. Even granting that it was wrong in Mr. Clark not to obey the city authorities, he should have had a speedy trial by an impartial jury all of which was denied him. Even when released under writ of *habeas corpus*, he was within three hours re-arrested and

HONEY-LOCUST TREE IN FULL BLOOM AT THE HOME OF D. M. BRYANT

FLOWERS OF THE HONEY LOCUST—(Photograph by D. M. Bryant)

fined. After demanding a change of venue, because of the prejudice of the mayor, that functionary again fined him, denying him his constitutional rights. This case was appealed to the Supreme Court, which decided that the City Ordinance against beekeeping was illegal and void, and that the keeping of bees was NOT A NUISANCE.

"The City Council of Fort Wayne, Ind., passed an ordinance against keeping bees within the city limits. If enforced it would practically wipe out beekeeping there. Such a pressure was brought to bear by the beekeepers, backed by the Union, that no attempt is made to enforce that ordinance.

"The 'McCormick' bill introduced into the Legislature 'intending to wipe apiculture out of Michigan,' as Prof. Cook stated it, raised such a buzzing about his ears that it was tabled on his own motion and there died.

"All the late cases against beekeepers have been killed by reading the decisions of the Supreme Court of Arkansas." Thomas G. Newman.

While the beekeepers may congratulate themselves upon the results above mentioned which recognize their legal rights, they should also bear in mind the advice of "L'Apicoltore," on page 404, of our December number, "The best way is that of accommodating gentleness, with the observance of reciprocal rights and duties as kind neighbors."

Later.—We clip the following from the Chicago Herald of April 5:

"P. W. Dunne, of 164 South Forest avenue, River Forest, Ill., father of Gov. Edward F. Dunne, has six hives of bees which have become a nuisance, according to complaints made to the village trustees and police.

"As a result Mr. Dunne has been ordered to remedy the nuisance or do away with the bees.

"C. Miske and E. F. Ligare, neighbors, complained that the bees stung their children as well as a number of others during the last few days.

"The scarcity of water, according to Mr. Dunne, is the cause of the trouble, He said the bees, in looking for water, would attack the children. He told his neighbors he was placing pans of water in his yard to divert the attention of the bees from the children."

The children stung were probably trying to drive the bees away from the watering place. If there are other bees in the vicinity, they are as likely to be guilty as those of Mr. Dunne. The remedy proposed to divert the attention of the bees will be more successful if the complaining neighbors will cover up the water supply for a few days, until the bees learn to go to another spot.

◆

Error in Pictures.—In our April issue a mistake was made in headings under the cuts referring to the National meeting in Denver. The cuts on pages 125 and 131 refer to the interior and exterior of the exhibition room at the Auditorium hotel, where the National meeting was held and not to the headquarters of the Colorado Honey Producers' Association.

HOME APIARY OF D. M. BRYANT AT ETHELFELTS, VA.—NOTICE THE ASTERS SURROUNDING THE HIVES

Apiary Demonstrations in Ontario for 1915.—Arrangements are well advanced for the apiary demonstrations to be conducted throughout the province of Ontario this coming summer. The increased attendance of this last year indicates the great interest that is being taken in this line of work. In all 55 demonstrations, with an average attendance of 34, were conducted this past season. The whole apiary and the beekeeper's equipment is placed at the demonstrator's disposal, giving him excellent opportunities to illustrate with the actual objects many of his remarks.

The demonstrator has complete charge of the meeting. Usually he starts by a short talk on foulbrood, then proceeding to the apiary and examining several colonies. If the disease is found a colony is treated. Suggestions are offered on many minor details that present themselves as the hives are being opened. Special attention will be paid to wintering. Models of the four hive wintering case will be supplied the demonstrator. These will form a new factor of the meetings.

Final arrangements are yet to be made, but ample notice will be given later.

◆

Iowa Field Meet.—A field meeting of beekeepers will be held at the Heights, McGregor, Iowa, Wednesday, May 19. Miss Mathilda Candler and Mr. Harry Lathrop of Wisconsin, and Mr. C. D. Blaker, State Inspector of Minnesota, will be the speakers. The Heights is a very sightly place overlooking the Mississippi river and near the depot at McGregor. A very pleasant meeting was held there last year, and a larger attendance is expected in 1915. A picnic dinner is planned the same as last year. FRANK C. PELLETT.

◆

Many Uses for Honey.—"Various ways in which the housewife can use honey to advantage are suggested in a new publication of the United States Department of Agriculture—Farmers' Bulletin No. 653, 'Honey and Its Uses in the Home.' In this country honey has hitherto not been in as common use as in Europe, especially in cookery. It is, however, a comparatively simple matter to substitute it in many recipes for common sugar or for molasses, and when this is done the resulting flavor is often both novel and agreeable.

"One of the great advantages in the use of honey is that cakes made with it will keep much longer than those made with sugar. A honey-cake made with butter, for instance, will keep its quality until the butter grows rancid, and one made without butter will keep fresh for months. For this reason honey is especially useful in recipes that call for no butter. Icing made with honey has the same advantage, and some icing made in the experimental laboratory of the Department of Agriculture, was found at the end of ten months to be as soft and in as good condition as when it was first made.

"The experiments conducted by the Department indicate that many of the instructions in the old cook books for the preparation of honey were unnecessarily elaborate. For example, it used to be thought that honey had to be brought to the boiling point and then skimmed and cooled. Some honey is extremely likely to boil over, this process requires great care. Experiments showed, however, that it appears to be quite unnecessary, and it is quite probable that the notion arose at a time when ordinary commercial honey contained more impurities than at present. Similarly, the older recipes say that the dough should be kept at least one day before the soda is added.

"No evidence to support this theory was found by the investigators. On the other hand, however, they did discover that dough containing honey can be more easily kneaded if allowed to stand for several days. Again, the use of 'potash' is recommended in most of the recipes in foreign cook books as a means of raising the dough. The properties of potash are quite similar to ordinary baking soda, and there seems no reason why the latter should not do just as well.

"Baking soda is a common kitchen commodity in America, and potassium bicarbonate—the potash of the cookery book is almost unknown for household purposes. As a matter of fact, a little experience will enable any competent cook to substitute honey successfully for sugar in bread, cake, preserved fruits, sauces and candies. It is safe to estimate that a cupful of honey will sweeten a dish about as much as a cupful of sugar, but since honey contains water in addition, there is less need for milk or other liquids. For practical purposes it is accurate enough to consider that for each cupful of honey a quarter of a cupful is added to the recipe. If these facts are kept in mind special honey recipes are unnecessary."

This Bulletin, No. 653, contains a number of recipes. We advise the beekeepers to send for it either through their representatives in Congress or through the Department of Agriculture.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Taking Off Sections

In the spring of 1914 my husband purchased two bee-hives; they are one and a half story hives including sections and foundation starters. They came in fine shape, and we were well pleased. The bees filled 31 sections last summer. I took them out a few at a time and left vacant places. Now the separators are warped. What shall I do about it? Can I wet separators in warm water and press them straight? These two colonies are strong now. Please advise me what to buy and how to manage to make them fill the most sections this summer? What kind of foundation fastener do you advise for a few colonies?

I put a colony in an 8-frame hive April 27, 1914, and they built the combs crooked. June, 1914, they were working fine, super *full*, so I cut out 30 pounds of honey and returned empty super and frames at once. They did not work in the super another bit. What was my mistake in this case? I also have a strong colony in an 8-frame hive *now*, which has nice straight combs in five of the frames in the super, some cells being filled and capped. How shall I manage it? In case you advise me to use full sheets of foundation in frames, what shall I do with little bits of comb?

Bees are bringing in pollen now. I have 19 colonies of nice bees, but a motley collection of hives.

[MRS.] BELLE EVERETT.
Maryville, Tenn.

If your separators are without glue you cannot only wet them with warm water, but better yet give them a good soaking in hot water or steam them. Leave them in a place where they will dry out quickly, leaving under pressure until thoroughly dry. But glued separators cannot be wet, as they will fall to pieces, so they must depend upon pressure for a long time.

It is a little difficult to say just how many sections you will need, so much depends upon the season and the crop you get, but it is always safe to have ready more sections than you expect to have filled, as there will always be some sections at the end of the season unfinished; still you must have these sections as a safety valve, because you never know just when the flow will cease, and these partly drawn sections are valuable to use as bait sections next season. If you think that in an extra good season you may get 150 finished sections per colony, better have ready about 175 sections per colony. If in a best season you think you will need more or less sections than that you should be guided accordingly. You should always be ready for a big crop, and if there are sections left over until the next season they will be all right to use then.

Never allow the bees to feel crowded for surplus room. When the first super is about half full raise it up and place an empty one under it. When this last is about half filled another may be added under, and so on as fast as needed. It is not a bad plan to add an empty one also on top where it will not be used if not needed.

Instead of taking out a few sections at a time wait until the super is all finished but the corner sections and take off the whole super; a new super may be made of these unfinished sections and returned to be finished. A hot plate foundation fastener, such as the Daisy, is good. This will cost about a dollar. You can get a Parker fastener for 30 cents, but it is not nearly so good.

When you returned the empty super after cutting out the comb, and the bees did nothing more in it, it was most likely because the honey flow had stopped.

That super with the nice straight combs in five of the frames can be left to the bees to finish out. Fill out the rest of the super with combs or frames filled with foundation. The pieces of combs can be filled into frames, but if small it will be perhaps better to melt them up.

Cleaning Supers and Separators With Lye

A Michigan correspondent writes:

"In Root's A B C of Bee Culture you are quoted as cleaning your supers and separators with lye. We use a fence separator. Do you think it would be wise to clean it with lye, and how much lye would it take for my tank that holds 30 gallons of water?

"I like to work in our apiaries, and find it both pleasant and healthful. I am eager for the season to open."

It is doubtful that you can clean your fence separators with lye. They are likely to be glued together, and would fall to pieces if put in the lye. Of course if yours are nailed instead of glued that's different; but even then it would be difficult to keep them from warping, as they would have to be put under a weight to keep them straight. Still you might be able to succeed with that part of it. If your separators are nailed, and you wish to try it, just keep putting in lye until your solution is strong enough to remove all propolis. Of course, they must be well rinsed after taken from the lye.

A Living from Beekeeping?

"I am a business woman, but expect to have to get out of a business life very soon. As I am dependent entirely upon my own efforts, I must get into something that will bring me in fairly good income, and I would like very much to know what is your opinion of beekeeping for women, from points of the nature of the work and the income therefrom? What is a fair season's profit per hive, and how many hives would you advise one to start with? I must do the work myself, and have no idea of how many hives one person can give proper care to.

"Do you know anything about Minnesota, relative to its being a good place for beekeeping?"

Minneapolis, Minn.

There are many women beekeepers that are making a big success. Almost everything depends upon the woman, just as in any other line of business. Not every man will make a success of beekeeping, neither will every woman. Don't for a minute imagine that success in any line of business is achieved without a knowledge of the business, and beekeeping is no exception to the rule.

You cannot jump into a full fledged beekeeper at one bound, but if you are willing to go slow, study hard, and be willing to work hard (for there is lots of hard work connected with beekeeping), there is no reason why you may not make a success of it.

But if you are thinking of giving up all other means of earning a livelihood and depending entirely upon beekeeping from the start for a fairly good income, don't do it, you will be disappointed. Even experienced beekeepers have years of failure owing to conditions over which they have no control when their bees are an expense instead of a profit. At such times one must have a reserve fund to draw on. To overbalance this, there are years when the profits are great.

There are other things beside money to be considered in beekeeping. Health is wealth, and the chance to work in the open air instead of being cooped up in a stuffy office is a matter of no small consideration. In many ways beekeeping is especially adapted to women.

What is a fair season's profit per colony is a pretty hard question to answer, so much depends upon conditions. A colony may yield a crop amounting to $25 or more while another colony standing beside it may yield nothing. One beekeeper may average in a series of years $10 per colony, while with others it may taper down to those who are failures.

As a rule it is safer to start with only two or three colonies and increase in numbers as you increase in experience, when you will be able to manage a hundred or more.

Minnesota is a good State for bees.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

The Golden State Apiaries

We introduce to the readers of the American Bee Journal this month Mr. George J. Brown, of the Golden State Apiaries. Mr. Brown is one of our rising young queen-breeders, and is a success everywhere you find him. He brings live business methods into the management of his apiaries, especially the selling end of the business. That he made a decided success in this line last year in spite of the dull honey market speaks for itself. We believe his hints about vigorous young queens and well-ripened honey should be well taken by both old and young beekeepers.

"The photograph showing the buildings is my mountain apiary as it appeared on or about the first of May last year. When I bought this place two years ago, there were 130 colonies scattered over about an acre. Through close extracting the previous season, being unfamiliar with the conditions of mountain flora and facing a poor season, it was necessary to feed heavily. But in spite of all this I lost but few

MOUNTAIN APIARY OF MR. BROWN, NEAR THE OLD "MISSION" TOWN OF SAN JUAN CAPISTRANO, CALIF.

ANOTHER VIEW OF BROWN'S MOUNTAIN APIARY

colonies, requeening most that were left. Last spring, after counting all that had bees, including a few nuclei, I had 90 colonies left, mostly with good Italian queens from the previous season. Of course, I could tell then that we would have a fair season. So I arranged to get as much honey as I could with as little increase as possible. By the end of the season I had 125 colonies in excellent condition with at least 1000 pounds of honey in the supers. I took off five extractings amounting to 9½ tons (19,000 pounds).

"I believe if I had increased according to the Alexander method I would have had considerably more honey and all empty hives full of bees. This would mean a great deal with our present excellent prospects.

GEO. J. BROWN

"I am sure that a great many California bee-men make a mistake by not keeping young queens. I find that a vigorous young queen, if well supplied with stores, will have a hive full of bees by the time the sage flow begins, without stimulating. This season I did not stimulate at all and will have to divide some of my colonies now (March 15) to keep them from swarming. I have rearranged this apiary and expect to increase by the Alexander method; also by bringing swarms from the valley until I have from 250 to 300 colonies.

"The other photograph is of my Lemon Heights apiary. Although it is in reach of considerable sage, the principal honey flow is from oranges and lima-beans. It is located at the edge of the San Joaquin ranch, where from 17,000 to 21,000 acres of beans are cultivated annually. The flow from the beans is of short duration. The average yield runs from 30 to 70 pounds to the colony; but mostly a low average, although one season some colonies stored 200 pounds. The orange yield is sometimes a failure, which was the case last spring.

"This apiary is run mostly for bulk comb honey, a large part of which I sell for bottling purposes. The past winter I had a little experience in bottling and selling honey which was very successful. The market being very slow, and not getting a fair offer for my honey, I decided to find out if there was a home market, as I had often been told.

"I got some Schram and Drey pint and quart white flint glass jars and some Kerr white glass jars. All of them were good with the preference for the latter. I cut up bulk comb honey in nice wide strips, long enough to reach clear down in the jar, filled it with a clear light amber honey. This made a very attractive article I then called upon the grocers in my home and neighboring towns and induced some of them to handle my goods. Some said they could not sell honey, having tried different kinds before. I did not doubt them. Well, I got my honey started, and when I next came around they all wanted more of it. They said that it was the best seller they ever had.

"People are ready to buy if it is put up right. It must be attractive. Some of my customers had in stock nicely packed honey put up by Los Angeles concerns, but in every case this honey was a dead article where mine sold quickly. This was not only because it was more attractively packed, but because it was directly from the beekeeper and guaranteed pure.

"Beekeepers should be encouraged to put up honey in packages to suit their trade. They should look after their own market instead of depending upon some one else and then kicking about low prices.

"And another thing. Do not try to sell *nectar; sell honey*. Well ripened heavy honey always gives satisfaction.

"Tustin, Calif. Geo. J. Brown."

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Kind of Weather that Favors Nectar Secretion Soils Best Suited to Honey Plants

Interesting reading that on page 79 of the March American Bee Journal, relative to the kind of weather that best favors nectar secretion, and the kinds of soil best suited to various honey-plants. As in many other things relating to beekeeping, I expect that our old friend "locality" cuts quite a figure in these matters, as, for instance, where temperatures are mentioned it is given among the answers that from 80 to 100 degrees is best suited for nectar secretion. While the latter figure may mean good honey weather in localities farther south, after 90 degrees is reached here in Ontario, nectar will, as a rule, cease unless we have an abundance of moisture in the soil—a condition we very seldom have.

As to soil best suited for various honey-plants, there are at least two things that we feel fairly sure of. Good strong clay soil is undoubtedly best for clover-honey production, while one acre of buckwheat on sandy soil will yield as much nectar as three or more on clay soil. While not at all sure about the matter, from the experiences of others as well as our own, soil seems to make little difference in the case of basswood and other trees that yield nectar.

In the matter of honey-plants listed, some exceptions would be made to the rulings if we tried to fit them into Ontario conditions. For instance, charlock or wild mustard is classed as a pollen yielder only, while here, in some seasons, it is a profuse yielder of nectar. As might be expected, white clover and alsike head the list of honey-plants, and the only thing we might differ in is that in Ontario alsike is the best honey yielder we have, leaving the white variety in the rear in the majority of seasons.

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Difference Between Post-constructed Cells and Ordinary Cells

Dr. Miller deserves a vote of thanks for that able dissertation on the question of the kinds of queen-cells. The description of the various kinds of cells is given in the Doctor's usual concise manner, written in simple language that any one can understand, and the article has no doubt been read with interest by many.

While we have felt fairly sure of being able to distinguish between post-constructed cells and ordinary cells, yet I am often puzzled about deciding between supersedure ones and those of the swarming variety, for as the Doctor intimates, it is often imperative that we decide this question when making examinations of colonies. However, I feel that I have learned quite a lot on the whole question by reading what the Doctor has given us, and thanks are hereby tendered for the same reason.

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With Bees Well Fed in the Fall the Loss is Small

This reminds me that wintering conditions in Ontario are much better than intimated in my notes for April. Wherever bees were well fed and protected the loss is small. Where the opposite was the case, losses are heavy.

Our own losses are confined to two yards, where over a dozen colonies broke cluster early in March and went to pieces with dysentery. Of course, the cause was bad stores that granulated, and the bees were literally starving with combs of solid honey in the hives.

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Bees in Normal Condition Last Fall Wintered Well 100 Miles North of Toronto

Friend Doolittle reports in March American Bee Journal lots of snow and cold in the month of February, but adds that the bees are not harmed as they are in the cellar. What about the poor bees that were outdoors 200 miles north of Mr. Doolittle's section, and that were no doubt exposed to much colder weather with no chances of a winter flight? I have just returned from the yard of 250 colonies 100 miles north of Toronto, and although these bees had no flight after the last week in October until April 7, yet every colony in a normal condition last fall was alive, and not a spot of dysentery in the yard. They are leather colored Italians and hybrids, with probably 25 colonies almost pure blacks. I have tried the goldens more than once, and did all in my power to winter them, yet for our localities they are absolutely worthless when outdoor wintering is practiced.

At the yard in question, 43 degrees below zero was registered on Christmas day, but it is only fair to add that at that date the hives were well covered with snow. The balance of winter was not as cold as usual, but the long confinement was unusual, and as aster stores were the main food, it is needless to say I was happily surprised to find things as good as they were.

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Caucasians vs. Italians

I wonder if friend Wilder has not let his enthusiasm run away with his judgment when he states, on page 123, that a man can run 600 colonies of Cau-

" LEMON HILL" APIARY OF MR. BROWN ON UPLAND IN THE SANTA ANA VALLEY, IN REACH OF ORANGE ORCHARDS AND BEAN FIELDS casians easier than 200 Italians? As I have probably been guilty of doing likewise sometimes, Mr. Wilder will not think I am offensively personal in making this query. I have a few Caucasians and like them very well, but have seen nothing so magical as to warrant such a sweeping claim as he makes.

First Pollen Noticed on April 8

The first pollen was noticed here in York county on April 8. At the yard just under discussion, it will likely be a week later, as snow was in the bush on the 8th and 9th. What little clover we have here looks well, and a much larger acreage at the north yard is also in good condition.

Large Hives vs. Small

Mr. J. E. Crane is, I believe, an advocate of hives larger than the standard 8-frame Langstroth, and this being the case he is to be commended for the liberal view given on page 92, when he points out where the small hive may be better than the larger ones.

Personally, I am very much in favor of larger hives than the 8-frame Langstroth, but, like friend Crane, I can see that under certain conditions the small hive may score over the larger one. But for extracted honey production there is only one reason worth considering in my estimation in favor of the smaller hives. This is a question of winter stores. Large hives always have more honey in the brood-nests in the fall while the small hives will be light and the bees will have to be fed. About once in seven or eight years, the honey will not be of the best for wintering, and heavy losses will occur in such colonies. Colonies in the small hives that must of necessity be fed in the fall, will always winter provided other things are normal in matter of queens, etc.

An Advocate of "Natural Foods"

I hardly think it wise to answer such an able article from such an able writer as that on page 116, directed mainly at your humble servant. One thing I *know*, Doctor, is this: Bees fed heavily on good sugar syrup here will winter every time. Bees left with natural stores will not winter well every time, and quite frequently heavy losses occur. While we "subpœnaed" only one when mentioning this matter in March American Bee Journal, the majority of the extensive beekeepers in Ontario will stand behind the claims I have made.

I cannot prove that the friend I mention might not have gotten 10 percent more honey if no feeding had been done, yet I am quite sure that he would have gotten a much higher percentage than 10 percent less, if that course had been followed, for at least two winters in the time mentioned have been disastrous when natural stores were in the hive, and in each case the friend mentioned had no loss whatever, and secured a crop when others had little because they had few bees.

After saying all this, I want to assure the Doctor that I am an advocate of "natural foods," and only regret that actual practice seems to demonstrate that our conditions in Ontario seem to demand that feeding be done, especially in a year like last season when little if any honey was gathered. For spring I have no use for sugar syrup. At that time it needs no scientist to prove that honey is better. But it may be that the very factors that make honey better for spring use, by their very absence in sugar syrup may be all the better for the bees when little brood rearing is going on and the bees are confined for five months with no flight.

If it was a matter of sentiment alone I would not feed any sugar at all, if possible to avoid it, but as it resolves itself into a question of dollars and cents to feed the "kiddies," we shall continue the practice no matter how much we may dislike doing so.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

An Apiarist's Clearing House

It has been noticed for some time that beekeepers have considerable trouble in securing competent help for the apiary. Those who have advertised for help find it necessary where help is offered from a distance, to require information on the following points: height, weight, age, experience, habits, wages desired, etc.

If a sort of civil service school in beekeeping could be established so that applicants for positions could be given a thorough examination, and then if found competent granted a certificate, it would make it easier for beekeepers to get competent help.

An examination for apicultural assistants should be given, also one for managing beekeepers. It might be be well for the National Beekeepers' Association to prepare to give such examinations, charging a small fee to cover expenses, and when an applicant for the examination had passed he would be given a certificate from the National Beekeepers' Association examining board. Such a certificate would be valued by the holder, and the best kind of a recommendation to the beekeeper needing assistance.

If the plan worked, examinations could be given for bee inspectors, queen breeders and agricultural college instructors in beekeeping. A certificate showing efficiency in these lines would be valuable to all concerned. Certificates of proficiency are granted in Great Britain, and it would be well if we could do something of the kind here.

Packing Bees Too Snugly

An example of too close and snug packing of bees for wintering has come to my attention. One or more thicknesses of burlap or canvas was laid over the top-bars, then a honey-board was pressed down on top of these quilts and a metal roofed cover put on over all. The entrances were contracted to about ⅜ by 2 inches. The corners of the hives and combs were all damp and wet, and some of the top-bars were moldy. These colonies were in nearly all cases weaker in bees and had less brood than colonies with full entrances and covers equipped with inner covers that give a chance for moisture to evaporate.

Bees winter best in the mild districts of the Rocky Mountain region, where ample upward ventilation is given. Bees suffer more from dampness than from cold. It is a mistake to tuck bees up too snugly for winter.

Honey Publicity

There is little doubt but that the use of honey is going to be greatly extended. The low price will be more effective than the publicity given by the beekeepers. Competition is very keen at the present time, as any one can find out by going on the road and selling honey to the grocers.

We could extend the use of honey by putting up "cooking honey" so labeled, in pails, and selling it for about the price of sugar. At the present time it would be possible to buy a good grade of cooking honey by the carload and sell it out at a good profit at the same price as sugar.

One of the defects to be remedied before we attempt advertising on a national scale is to have honey advertising on all our honey shipping-cases, cans, sections, cartons, etc. There is much good white space wasted that could add to honey publicity.

The use of cartons for section honey will grow, and every carton should be attractively labeled and should show the surface of part of the comb. Beekeepers can greatly improve the appearance of their honey labels, and if we could have a National board of censorship to forbid the use of some of the crude labels put on perfectly good honey, the trade would be benefitted.

Leasing Bees

The terms upon which bees are leased in the West vary. A share of half and half is probably the most common method, in which case the owner furnishes all equipment except horse and wagon (or automobile) and shop. There are some cases where owner furnishes the shop, although the renter usually does this. Location, rents and taxes are generally paid by owner. The hives are kept painted by the renter, and the owner furnishes the paint.

If losses from the original number of colonies are suffered the renter should not stand this unless it is caused by his negligence or carelessness. Suppose that the renter through inexperience or carelessness allows foulbrood to gain a foothold, and a lot of the combs have to be melted up and the number of the colonies of the bees is depleted, should the renter have half of the wax from those combs? There are cases where disagreement may occur unless all such points are mentioned in the contract.

If the renter of the bees is competent he deserves a larger share than one-half the surplus. In parts of the West the renter, if competent and trustworthy, can secure for the owner good interest on the investment and have two-thirds of the surplus for himself. In this case, of course, the renter should furnish two-thirds of the supplies.

BEE-KEEPING IN DIXIE

Conducted by J. J WILDER, Cordele, Ga.

Late Season

This is one of the most backward seasons we have ever had, with almost steady cold weather up to the time when we might expect almost settled weather. These warm spells were very short; just long enough to cause the first honey plants to bud and bloom (such as huckleberry and titi), and as a result much of the bloom was killed by the heavy freeze which followed. This shortened the flow considerably, and, too, bees were kept from the field. Honey plants were nearly half done blooming by the time the bees could reach them. Nevertheless the honey flow has been as good as we ever saw it at this time of the year, and reports show that this is general throughout the South. As our best honey plants usually bloom when we may expect settled warm weather, they will be much later than usual, and prospects are good for at least an average crop of honey.

As a rule, bees had run short of stores too soon, and there was much loss in brood-rearing and loss of colonies during the latter part of the cold weather, which would not have been the case had there been a few warm days.

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## Comb or Extracted Honey—Which?

"As I have not had any experience with bees, I thought I had better start with two colonies, one for comb honey and the other for extracted; or would it be advisable to have both hives for the same kind of honey? Which would be best? What size of hive should I use?

"Would it be a good idea for me to get a glass hive so I could watch the bees? Where could I get two colonies of Italian bees, and what should they cost me? What should my outfit consist of as a starter?" R. P. COTTER.

Barnesville, Ga.

It is best for the beginner to start by producing chunk honey, using the regular shallow extracting super and frames for storing, and not less than two supers to each colony. This is the simplest and easiest way to produce honey, and, of course, best for those less enlightened in bee culture. You could hardly be successful producing comb honey in 1-pound sections in your locality, and with such an arrangement as I suggest there would be no change necessary to run for extracted honey later, as the same size of super and frames would be best.

In Dixie, where we have no disease to fight or winter problems to solve, it does not matter whether a beginner starts with 2 or 20 colonies. I rather favor a larger number where a beginner desires a good start. Eight-frame hives and supers would be better in your locality than the 10-frame size.

Yes, it would be a splendid idea to get an observation hive and keep it in a convenient place where you can watch the working force of the colony as you study the bee publications and get experience in handling them. It will also aid you in the study of the pasturage of your country, which you must know. I always used a 1-frame glass hive, as it would admit of a more open and convenient inspection, and I always kept it as strong as possible.

It is always more economical to get bees close to home. As a rule they can be obtained cheaper, and there are no transportation charges. Bees in box hives can be purchased at $1.00 to $1.50 per hive. In modern hives from $3.50 to $5.00, and good queens can be obtained at $1.25. You should have at least one book on bee-culture, and should subscribe for a bee-paper. A bee-veil, a smoker, hive tool, aside from hives, etc., are necessary.

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SAN REMO. (Taken by Mr. Capponi.)

The Grey Caucasian Bee

This variety of the Caucasian bee seems to be in the lead in point of quality, both in this country and their own. Their color is against them, as it is so much like that of our native or German bee. With only a few bees in a cage with the queen, the purchaser who is not familiar with them, concludes that the breeder has sent him a queen of the common dark bees, and to some degree he feels like he has been wronged by him. This is natural. One of the most attractive things about the Italian bees is their beautiful yellow color, and in the better bees we have learned to look for it. In this particular the Caucasian bee brings disappointment; but of late the "yellow" stock is condemned all over our country, and we are now looking more for quality and less for appearance. So we cannot fall out much with them on account of their dark color, if they have the quality.

After handling this bee for a number of seasons, I can truthfully say that I prefer their deep steel color to the bright yellow color of the Italians, because the color is more even throughout the apiary except in the case of the older bees crawling about on the comb which have a very dark glossy color, the hairy coating of the abdomen having left them, and at times thousands of these old slick black bees appear which represent the oldest of the fielders, and which have spent a long and useful life.

These old bees hold their wings in an uplifted manner, and they go and come almost like shot in the air or at a wonderful swiftness. These bees appear but little among the German bees, and by this and their much deeper grey color on the comb, as they are handled we may know them. The gentleness and behavior while handling, the prolificness of the queens and the vim of the bees will also tell the tale. The grey propolis will appear about the entrance of the hive at the close of the honey flows.

From time to time there has been much said through our Dixie Department about the good qualities of the Caucasian bees, as they have been given a trial by progressive beekeepers in different sections of our country. If there is one beekeeper who has tried them and has not reaped good results he has failed to report. It may be true that we have had too much to say about these bees. "A good thing cannot be told too often," but we have done it conscientiously with nothing in view except the general promotion of our industry.

The more experience the writer has with these bees the more they come into favor. The general spring apiary work among all our bees reveals the fact on every hand that our Caucasian stock is all that we can depend upon for good results this season. Their hives are full of bees, and they are right in the harvest with the greatest force we ever saw, and honey is appearing in the hives as fast as we ever saw it. Our best Italian stock is far behind in breeding, and the first flow in the spring will be over before they are ready for it, and at one or two branches of our business, where we have the Italians installed, we cannot hope for a half crop of honey. One apiarist who has charge of some 450 or 500 colonies, writes us, "No more Italians for me, and nothing but Caucasians will do."

It will only be a very short while before every colony in our yards will be headed with a Caucasian queen.

NOTES FROM ABROAD

By C. P. Dadant.

From Ancona to Rome, the railroad line crosses the Apennines, those famous mountains which were for centuries the refuge of the Italian brigands. But brigandage has disappeared since the unification of Italy, in the last half of the past century. To find brigands, one has to come to America, where bold robbers occasionally ply their vocation in some of the finest railroad coaches of the entire world. The Italian railroad coaches are not so comfortable as our own, and we had followed the advice given us to travel only in first class. But one is safe in them, and the Italian railroad officials are as polite and accommodating as ours, at least.

The Apennine mountains have nothing attractive. They are not high enough to be snow covered in summer and their highest peaks are as barren as our Arizona cliffs. The hills along the streams in the part crossed by us were covered with olive trees. The grapevines of course are to be found everywhere. Villages, castles, monasteries, convents are built on the crest of the hills. They are all very old, grey and dilapidated. They were built there for self protection centuries ago. The houses are huddled together with just passageway between them. As the meager grain and hay crops are grown in the valleys, everything has to be hauled to the hilltops for use.

ENGINEER CAPPONI, OF SAN REMO

However, one must not think that every spot among the hills between Ancona and Rome is to be thus described. There are beautiful regions. The apiary of Mr. Degenève, of Salmata, in Perugia, is in one of those fine spots, and we reproduce it in this number.

Rome, the Eternal City, is a mixture of the magnificent *New* and the ruins of the great *Past*. It is out of the compass of my letters to tell of its monuments, its immense ruins, its museums, its 380 churches, its marble palaces, its catacombs. The foreigner who wishes to become acquainted with Rome must stay there a month at least. A year would hardly be sufficient to see all its wonders. We remained but three days. We left it with a deep impression of its greatness, its vastness, and its beauty.

We did not meet any beekeepers, although some were anxious to meet us. We received afterwards a very lengthy and complimentary telegram, which had been sent to Ancona, the very day upon which we left the city, from a noted Roman apiarist, Signor Montagano, inviting us to call upon him. We regretted very much not having received it in time.

Signor Montagano is the author of several modern works on bee culture, of late date, 1911 to 1914, and a contributor to to the Italian bee-papers. One of these works, "La Mezzadria

SOME OF ITALY'S LEADING APIARISTS BEFORE THE DOORS OF THE MINISTER OF AGRICULTURE AT ROME
Cotini, Triaca, Bovelacci, Capponi, Visconti, Asprea.

Apistica," is the only book I know of that treats especially of the renting of an apiary on shares.

The only bees we saw were in a few dilapidated skeps, baskets, boxes and kegs, at the house of a *contadino*, in the Roman Campagna, as we rode through it after a trip upon the famous Appian Way (via Appia). We had visited the catacombs of St. Calixte, where, for one franc each, we had been supplied with a small candle and had followed a young monk some 50 feet under ground, among tortuous passages, where we met four or five parties of tourists, mainly Americans.

The contadini homes, in the Roman Campagna, are ruined houses, with very small windows and sometimes big arches for doors. They live among the remnants of the past. In the outskirts almost every third house is a tavern, where they sell "vino e birra." This was Sunday, and the roadside inns were swarming with people seated at tables along the dusty road or on a piazza on the flat roof, drinking, laughing, singing, served by barmaids.

Lots of good looking young people, but lots of dirt, poverty and rags. The Roman Campagna has not been misrepresented.

On Sept. 16, we reached Florence. There a number of beekeepers had been notified of our intended arrival and were expecting us. But through a misunderstanding on my part we went to the wrong hotel. So they waited for us in vain, while we were in the city. As a result we simply saw sights for two days and went on. Florence is beautiful. But of what use would it be for us to attempt a description when so many able writers have already done it better than we could?

Palaces and statues, frescoes and paintings; the nude, more or less everywhere, not only here, but in all Italy, even in the Vatican at Rome, where the succeeding popes have gathered together and carefully marked, with their names, every valuable sculpture. This strikes our American prudery as extremely incongruous. But it is a matter of custom and not of morality or religion.

Away we went, down the Arno, towards Genoa. Passing through Pisa, we thought to have missed seeing the Leaning Tower, but it loomed before our eyes just as the train pulled out.

At Pietra Santa, we saw endless carloads of white marble. Looking up our guide book, we found ourselves in the vicinity of Carrara, the source of the renowned Italian marbles. Mountains as white, almost, as snow, showed on our right. Carrara ships about a million tons of marble every year throughout the world. Its 700 quarries occupy some 6500 men.

We were now traveling along the shore of the Mediterranean sea, with hundreds of tunnels along the way, for the bluffs are very abrupt. Everywhere are villas, hotels, pink-colored houses, village streets which we saw in a flash as we rushed out of one tunnel into another. It was very beautiful but very tiresome. We reached Genoa in the evening, but only remained over night. We had promised to be in San Remo the following day.

We reached San Remo on the morning of the 19th. At the hotel, when we enquired as to the address of Engineer Capponi, whom we expected to visit, the manager laughed and said: "You need not hunt him, he called here yesterday and twice this morning asking for you. He will be here again before long." Indeed, we had hardly taken possession of our room when we received a note informing us that Signor Capponi would call for us with a carriage promptly after lunch.

Mr. Capponi, an architectural engineer, is one of the leading men of the Italian association of beekeepers. He keeps his bees in the mountain, back of San Remo. He took great pride in showing us around, and when we thanked him he replied: "Do not thank me, I am only doing my duty as our members understand it, and it is a great pleasure to welcome you."

San Remo is a small city of 17,000 inhabitants, and mainly a winter resort. It was dead, at the time of our visit, only five of its numerous hotels being open in the summer or fall. Aside from the olive trees still prominent here, the vicinity grows winter flowers, roses, carnations, etc., for shipment to cold countries. Hundreds of acres are devoted to this purpose, and I was told that entire carloads of roses were shipped to the capitals of northern countries, in the middle of winter. Being along what is called the "Riviera," on the south side of the mountain range, its bees are of a mixed race, hybrids, or at least dark and rather cross, as a rule. This is the part of Italy which is called Liguria. So the name formerly used to denominate pure Italian bees, "Ligurians" is a misnomer. I should like to have been

A STREET IN OLD SAN REMO

able to find the exact limit where the change to the pure race of 3-banded bees is found. Certain it is that we saw only regularly banded, quiet Italian bees, all through central Italy, while along the Riviera they are darker.

The honey harvested in these mountains, according to the experience of Mr. Capponi, is mainly from the blossoms of lavender (*Lavandula officinalis*) which grows there wild. Its honey is very thick and quite difficult to extract. The nectar contains very little water when harvested. In this it resembles heather honey.

Mr. Capponi had never seen bee diseases of any kind, but said that the bees there were very much annoyed by the death's-head moths, which abound along the coast.

San Remo has suffered at different dates from earthquakes. As a result they have braced the houses, in the old part, against each other across the streets. Mr. Capponi took a snapshot of us in one of these old streets. But the new parts of the city, the villas of the wealthy tourists are beautiful. We had a chance to admire a few which had been designed by our host, and upon which money had been lavished evidently without counting.

On the morning of the 20th, we took a definite leave of Italy and its apiarists, with much regret, for nowhere had we met a more hearty reception. France was again before us.

At Vintimille, the grotesque ceremony of custom-house examination had to be endured, the French officials overhauling our baggage at one end of the big hall, while just across a desk the Italian officials were doing the same thing to the baggage of the eastward-bound public. When will the human race quit putting artificial barriers to its own traffic? A hundred years ago, they had such barriers between all cities and the neighboring country. Even now the "octroi" or city-toll flourishes in a great many places, and there are conservative persons who believe it necessary.

APIARY OF FREDERIC DEGENEVE AT SALMATA, ITALY

"Pour qu'au loin il abreuve
Le pâtre et l'habitant
* Le bon Dieu crée un fleuve,
Ils en font un étang."

(*The Lord makes a river,
They change it to a pond.)

Had the Southern Confederacy succeeded in seceding from the United States during the Civil War, the Mississippi river would now be cut in two by custom house lines. The big river would be changed into a pond and many people would think that quite correct.

Here also was the change from the hour of Central Europe to that of Occidental Europe. We turned our watches back an hour; a very evident proof that we were going towards home.

CONTRIBUTED ARTICLES~

A Little History Concerning the National

ONLY two men are now living who attended the first National Convention of Beekeepers Dec. 21 and 22, 1870, at Indianapolis, Ind. This convention organized under the name of "North American Beekeepers' Association." The two now remaining members are M. M. Baldridge, of St. Charles, Ill., and Dr. G. Bohrer, of Chase, Kan. Mr. Baldridge was elected secretary of that association.

Rev. H. A. King, who was then using and selling a hive that was infringing upon the Langstroth patent, sent a call for another meeting for Feb. 8 and 9 following. At this meeting Dr. Bohrer was also present. He is, we think, the only man living who attended both of these original conventions. The name given to this second association was "American Beekeepers' Association." It met at Cincinnati. As far as we know, only one other man is living who attended this. It is A. I. Root, of Medina, Ohio.

The two associations were merged into one at a consolidation convention, in Cleveland, Dec. 6, 7, and 8, 1871.

Concerning these interesting matters, Mr. Baldridge writes us:

The Cincinnati convention was held on Feb. 8 and 9, 1871. I did not attend that convention nor the consolidated convention held in Cleveland Dec. 6, 7, and 8, 1871. Rev. H. A. King, of New York, was elected secretary of both the Cincinnati and Cleveland conventions. N. C. Mitchell, of Indianapolis, Ind., was made treasurer of the Indianapolis, Cincinnati and Cleveland conventions. Father Langstroth was elected president of the Cincinnati and M. Quinby of the Cleveland convention.

EARLY EVENTS OF AMERICAN BEEKEEPING.

I was born Dec. 2, 1838, near Middleport, N. Y., and lived there until the spring of 1861. I began to keep bees in 1848. In the fall of 1857 I visited Mr. Quinby and his apiary, and I saw there for the first time the Langstroth hive. Mr. Quinby, at that date, had nearly 100 Langstroth hives in use in his apiary, and he was so well pleased with them that he advised me to adopt the hive in my apiary the following year. I followed his advice, but not until after I received a visit in the spring of 1858 from R. C. Otis, of Kenosha, Wis., the man who purchased the patent of Father Langstroth, and who did more *as a pioneer* in introducing the movable frames among the beekeepers of the United States, prior to 1870, than any living man.

I first met Father Langtroth in the spring of 1860, at Flushing, Long Island, at the home of S. B. Parsons, the person who first imported the Italian bees direct from Italy. I was at the time attending the State Normal School at Albany, N. Y. Father Langstroth sent me an invitation to visit him at the Parsons apiary and see the Italian bees Mr. Parsons had imported for himself. I complied soon thereafter, and on the day of my arrival Father Langstroth and I had the pleasure of seeing the first Italian queen emerge from her cell. While there I also saw the only three Italian queens that were then alive from that first importation direct from Italy. Mr. Parsons bought a number of Italian colonies in Italy for himself, but lost the most of them on their way by water to New York city. Owing to this heavy loss the three queens I saw, as stated, represented an outlay by Mr. Parsons of about $900.

FACTS IN REGARD TO THE LANGSTROTH HIVE.

The movable-frame hive was patented Oct. 5, 1852, by the Rev. L. L. Langstroth. In 1856, Roswell C. Otis, who lived near Kenosha, Wis, being interested in bees, and an official of the Wisconsin State Fair, offered a premium of $10 to any one exhibiting the best bee-hive during the State Fair for that year. Some one, whose name and address I have forgotten, brought a Langstroth hive, and it was awarded said premium. A short time threafter Mr. Otis made Mr. Langstroth a special visit regarding his invention, and negotiated with him for the purchase of his patent for the United States, Mr. Langstroth reserving for himself a small amount of territory.

At first Mr. Langstroth did not wish to sell all the territory to Mr. Otis, as P. J. Mahan, of Phildelphia, had been acting as an agent for Mr. Langstroth, and had been negotiating for more or less territory in the southern States. This matter was finally adjusted between Mr. Langstroth and Mr. Otis by the latter agreeing to visit Mr. Mahin and sell him the territory he might desire. This was done soon thereafter. Mr. Otis sold to Mr. Mahan all, or nearly all, of the southern States, and secured from him his promissory note, endorsed by a wealthy man as security, and made payable at a specified bank in Philadelphia at maturity.

Mr. Otis then returned to the home of Mr. Langstroth to exchange the Mahan note for the note or notes he had given to Mr. Langstroth. The exchange was made, and in due time Mr. Langstroth sent the Mahan note to the specified bank for his money, but Mr. Langstroth neglected to notify said bank to protest the note in case it was not paid when due. The bank did not protest the note and this released the indorser, who was a relative of Mahan. The outcome was that the Mahan note was not collectable, and Mr. Langstroth lost the money.

The facts as enumerated above were detailed to me personally by both Mr. Otis and Mr. Langstroth, as many beekeepers since that transaction had accused Mr. Otis of having robbed Mr. Langstroth of his patent, or out of the purchase price. This was why Father Langtroth was a poor man financially or in very limited circumstances. No one in the United States had perhaps a better opportunity to know what the facts were than myself.

St. Charles, Ill.

The Value of Testing Queens

BY C. E. BARTHOLOMEW.

THE methods as practiced by queen-breeders of testing the purity of the mating of Italian queens by the markings of their offspring is no proof of the purity of the mating.

The report on the results of a series of experiments, covering the past four years, under the direction of Prof. Wilmon Newell, of the Texas Experiment Station, has definitely proven this point. (For this article see "Science" for Feb. 5, 1915.) These experiments were carried out on the crossing of the Carniolans and Italians, and Prof. Newell's results demonstrate that when an Italian queen is mated to a Carniolan drone the resulting workers are apparently Italian, and when a Carniolan queen is mated to an Italian drone the workers are again Italian. This is exactly the result that we might expect, if the bands of the Italian bee are a dominant character, under Mendel's law. In regard to the Carniolan and Italian cross this has been proven by Prof. Newell's experiments.

The writer the past year has carried on some experiments in the crossing of black queens to the Italian drones, and in each case the black queens so mated gave offspring that were the typical 3-banded workers of the Italians. The latter part of the season was so poor here that experiments started could not be completed, and the crossing of black drones and Italian queens has not been tested, but in the writer's mind there is not the least doubt that the result will be the same.

In the face of these facts, what is the value of the present methods of queen testing for the purity of the mating?

As a result of these experiments, however, there has been discovered a test that will be of great value to the queen-breeder, for by it he may be certain of the purity of the matings of his breeding queens. A mismated queen will always give pure drones of her own race, due to the development of drones from parthenogenetic eggs, but a daughter queen of such a mismated queen will give drones of each race. As a test of the purity of the mating of a breeding queen, the daughter queens must be the ones used. If the daughter queens, of a queen chosen for breeding purposes, give drone offspring of a race other than the race for which the purity is tested, such a queen has been mismated, and should be discarded for breeding purposes. The mismating of the daughter would have no effect upon the above rule. But in judging the races of drones the breeder must depend upon other characters than color alone.

Another fact is that pure Italian queens mated to pure Italian drones will give as offspring varied banded workers. I have one queen now that during the early summer of last year gave all her workers of the typical 3-banded bees, late in the summer and fall the workers were 2 and 1 banded, and some of them had to be examined closely to identify any color at all, and now again this same queen which is laying is giving the typical three-banded bees again. (I have been rearing these bees indoors in the greenhouse this winter.) The causes of such variations must be solved by future experiments. No doubt due to this type of variations many purely mated queens have been discarded, but such queens should not be used as breeders while they may be excellent honey producers.

Iowa State College, March, 1915.

Glucose and Karo

BY A. F. BONNEY.

DEAR SIR:—Having read your article in the American Bee Journal on advertising and karo, I think an advertisement appearing in our local paper will interest you. The first advertisement appeared Dec. 28, 1914, others to appear each Thursday. As the public was invited to ask questions, I asked the following about karo:

What is the percentage of glucose in karo?

What is glucose?

Is glucose healthful?

How does the food value of karo compare with pure bees' extracted honey?

As my family uses about 8 gallons of extracted honey per year, would it be profitable and healthful to use karo instead?

My questions have not been answered. There seems to be a hole in the sauce-pan somewhere. Perhaps you can suggest something which will help advertise honey, if this form of advertising is to be used through the country. GEORGE E. MORRIS.

South Barre, Vt.

Replying to your questions: I think you will find the proportions of cane sugar and glucose on the *karo* cans. We do here. I think it is about 10 percent cane sugar, just enough to make it sweet. Glucose alone is a tasteless mess.

Pure or natural, "glucose" is, chemically, a sugar with the formula of $C_6H_{12}O_6$. That is, 6 molecules of carbon, 12 of hydrogen, and 6 of oxygen. Cane sugar has a formula of $C_{12}H_{22}O_{11}$. However, the "glucose" you allude to is the artificial, which is made by treating starch with weak sulphuric acid and subsequently purifying it as much as possible with lime, to remove any free acid there may be in the mess.

Is this glucose healthful? I do not think it is. In digestion the sulphuric acid must be liberated, and I cannot imagine that the constant digestion of even a minute quantity of the acid can do any one any good. In the case of children it might do great harm.

How does the karo compare with pure extracted honey as a food? Well, honey is solid food, and predigested at that; that is, being a *pure* glucose, it is entirely absorbed. There is no poison left behind to irritate. Pure *karo* (artificial glucose) has no food value if we leave out the cane sugar which is put in to make it usable.

You ask: "Would it be profitable and healthful to use karo instead of honey on my table?" No.

Buck Grove, Iowa.

Displays and Retailing Honey

BY S. H. BURTON.

AT a recent apple show I was on the program to give an address and demonstration on "Beekeeping for the Orchardist." We exhibited hives, frames, supers, and other paraphernalia in the flat, showing the manner of putting them together and other subjects relating to amateur beekeeping. With this exhibit we also showed the finished product in section honey and in shallow extracting frames. An especial interest was shown in the shallow extracting frames with their smooth sides of solid honey built clear out to the end and bottom bars.

Many remarked that they had never seen honey exhibited in this form, and these frames, holding 2½ pounds net of honey, met with a ready sale at 50 cents per frame, while I had to sell the section honey at a big discount rather than take it back home. This proved conclusively to me that the public is willing to buy and eat more honey if it is put before them in a different form than that of the conventional section box.

A buyer stepped up to the booth and asked: "How do you sell your honey?" Fifty cents per *frame.* "Why, that's cheap. *Got any more?*" while I heard a lady remark, "I know that isn't 'manufactured.'"

Eating honey at 20 or 25 cents per section is a luxury and a seeming extravagance, from the consumers' standpoint, and it only appears on the table at rare intervals.

For the comb honey producer nothing would be better than to market the honey in the shallow extracting frame. It makes a beautiful appearance when packed in the glass front shipping case, and is sure to attract attention. Each frame should be wrapped in oiled paper and neatly tied. A shipping case of slightly larger dimensions than one holding 24 sections is required. Honey packed in this manner will stand transportation better than in sections, for it is more firmly attached to the sides. Offered to the consumer in this form, the frames holding 3 pounds net and retailing for 60 cents per frame, will sell almost as readily as a section at 25 cents, *and the consumption is trebled.* The customer is buying his honey at 20 cents *per pound* instead of 25 cents per section holding 12 ounces. On our farm bill board is a sign reading: "Bulk comb honey 15 cents per pound." This honey is cut out of the shallow extracting frame and delivered to the customer in half gallon paper oyster or ice cream buckets, which makes a neat, cheap, and convenient package. This meets with a ready sale, and our list of customers is constantly increasing.

The great trouble with the *retail* honey market is that honey is offered for more than it is usually worth. I have taken the time to enquire the retail price of honey in a great many towns and cities, and I find it usually offered at 22 to 25 cents per *section,* regardless of the number of ounces in the section. However, I met a grocer at Seymour, Ind., who is a gem from the honey producers' standpoint. He wished to sell more honey, and in order to do this he *talked* honey and exhibited honey. Ten glass front cases were stacked in his show window, and a neat display on the inside. I find, said he, "that I can double my sales on honey by offering it at 20 cents per section, or two for 35 cents, rather than hold out for 20 cents per section straight, and with a little salesmanship the customer takes two sections instead of one. My profit on the individual sale is smaller, but I sell *more of it,* which more than counterbalances the difference."

Here, my fellow beekeepers, is the key which unlocks the door to a greater demand for honey. We must get the retail price lower, not that the retailer is not entitled to a legitimate profit, but a profit of 25 or 30 percent on a single section is more than the business justifies. "Smaller profits and more sales" is what we must hammer into the retail if we would have the public "eat more honey."

Washington, Ind.

No. 5.—The Honey-Producing Plants

BY FRANK C PELLETT.

(Photographs by the author)

IN the June number we expect to take up the sources of early spring nectar and pollen, and in the midsummer issues will consider the sources of the principal honey flows on the northern United States and of Canada. It will be some months, probably, before we return again to the minor plants blooming in late summer and fall.

BUTTON BUSH.

The button bush, also called button willow (*Cephalanthus occidentalis*), is a bushy shrub growing in marshy places, stagnant shallow water, and along streams, from New England to Texas and west to California. This shrub, or in places a small tree, has a very wide range and is found in most of the States where honey production is important. Bulletin No. 102, of the Texas Agricultural College, reports it as common throughout Texas, and the bulletin relating to honey plants of California (217 Experiment Station), records it as a good honey plant in California. It is listed in the catalog of plants of nearly every State and of Canada, which the author has consulted. It is also said to occur in Asia and possibly Africa.

Our readers then who live in the vicinity of wet lands are likely to find specimens near at hand. In a few sections it is sufficiently abundant to be an important addition to the midsummer flora. It is reported as more particularly valuable in the overflowed lands along the Mississippi river. The bees seek it eagerly when in bloom, and in places where it is plentiful it is regarded as of considerable value as a honey plant.

The honey is light in color and mild in flavor according to published reports. Fig. 22 shows the shrub as it appears in bloom, and Fig. 23 shows a near view of the flowers which are crowded together in dense heads giving them the appearance of round cotton balls.

The shrub is very bushy with an abundant foliage. It is reported as reaching a height of 40 feet in California. In Alabama it is recorded as a shrub of from 6 to 15 feet in height which is more like its appearance in Iowa according to the author's observation. Here it is rather a small bush not much higher than a man's head, and as far across, with many branches from the ground.

The blooming period is July and August, according to locality, a season when additions to the honey-producing flora are most welcome.

ROCKY MOUNTAIN BEE PLANT.

The Rocky Mountain bee plant, *Cleome serrulata*, also known as stinking clover, is principally confined in its distribution to the plains region west of the Missouri river. It is also reported from north Pacific Coast States. While it is a dry land plant, it is occasionally reported from Illinois, Iowa and Minnesota. Although it is occasionally seen elsewhere, the author has not seen it in Iowa excepting on the Missouri river bluffs where it is plentiful in some localities. This plant is reported as especially valuable in Colorado, where it is said to produce

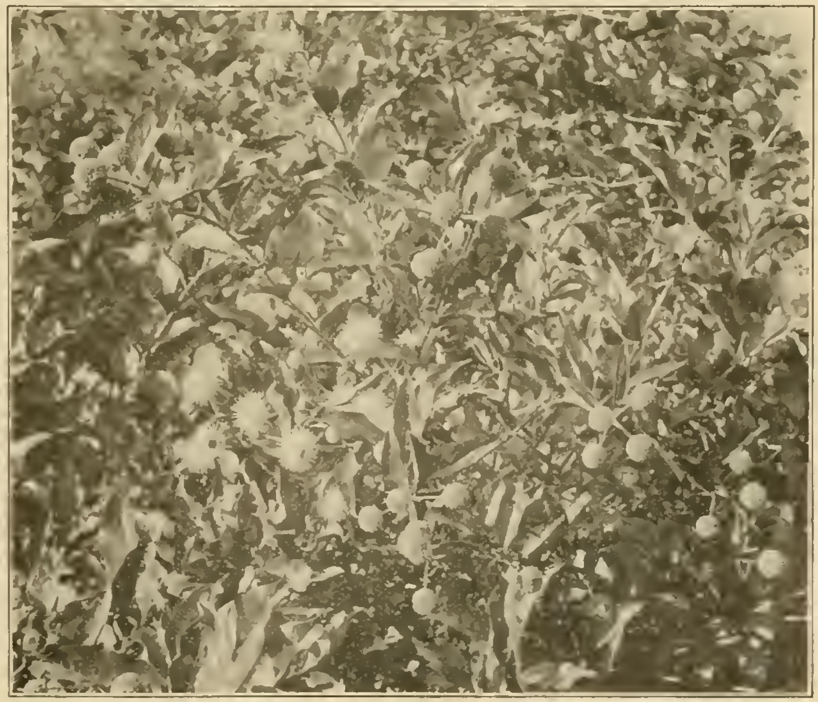

FIG 22.—BUTTON BUSH IN BLOOM

considerable quantities of honey.

It is an annual with large, showy, pink or purple flowers. At one time there was much interest in this plant on the part of eastern beekeepers who tried to introduce it by sowing seed. At the Michigan Agricultural College a small field was planted to ascertain whether it could be grown profitably for honey alone. As no plant has as yet proven to be sufficiently valuable to justify its cultivation for this purpose exclusively, it is not surprising that the Rocky Mountain bee plant did not prove to be an exception. It is acrid and pungent and said to be distasteful to animals, which seldom eat it. If the plant had any value for any other purpose beside honey production, an effort to extend the area of its distribution might succeed, but the introduction of plants that are essentially weeds in their nature seldom meets with favor.

Atlantic, Iowa.

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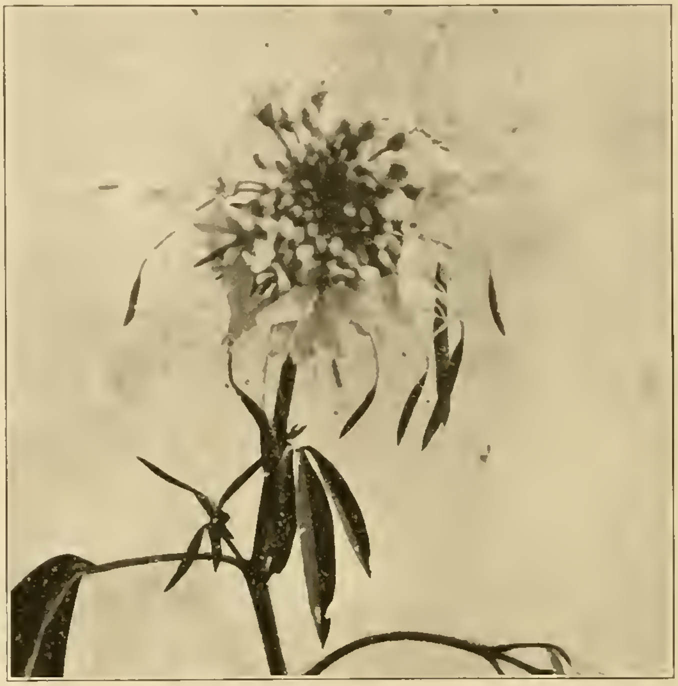

FIG. 24.—ROCKY MOUNTAIN BEE PLANT

How I Produce Extracted Honey

BY F. KITTINGER.

(Read at the Wisconsin State Meeting.)

IN producing a crop of honey, either comb or extracted, preparations should begin with the previous fall. Each should have a good prolific queen. I prefer queens not over two years old, as a young queen will continue laying later in the fall than an old queen, thus securing a good force of young bees to go into winter quarters. Having all colonies strong in bees of the right age, the next thing is to see that each colony is supplied with sufficient stores of good quality. For cellar wintering I prefer a little sugar syrup fed to each colony late in the fall, unless it has sufficient sealed honey of the best quality.

I winter my bees both in the cellar and out-of-doors, the majority, however, being in the cellar. I have good success either way. I aim to take them from the cellar about the time soft maples are in bloom, providing I can keep them quiet that long. We take them out at night when the prospects are for a mild still day following. I find that by taking them out at night they quiet down before morning and come out more gradually the next day, not drifting as badly should it prove to be windy. All entrances are reduced as soon as the hives are removed from the cellar. It is a very important thing that the hives be located in a well sheltered place, out of the sweep of the wind.

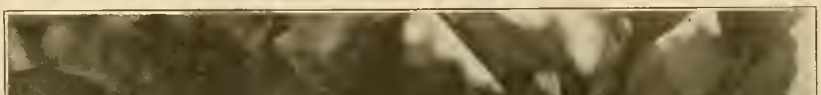

FIG. 23.—FLOWERS OF BUTTON BUSH

About five days after removing the bees from the cellar I start examining them, as the queens should be laying by this time. All colonies that do not show eggs or brood are marked as queenless to be examined again later. At this time each colony is marked by a small stone placed on the cover, the different positions of which indicate the condition of the colony, whether strong or light in bees; whether heavy or light in stores, and whether having a laying queen or being queenless. Each colony is again examined from time to time, and any short of stores are provided with frames of honey or fed sugar syrup, provided frames of honey are not to be had. As soon as the strong colonies can spare a frame of brood, one is drawn from each colony and given to one of the medium ones. This plan is continued until all but a few of the very weak ones have their brood-chamber full of bees and brood.

During the time of fruit bloom, or before adding upper stories, each colony is examined and the queen found. All queens of the previous season's rearing are then clipped, and a tin tag indicating the age of the queen placed on the front of each hive. All colonies that are strong in bees and brood are then given a set of worker combs in an upper story without a queen excluder, giving the queen an abundance of room for brood.

About ten days or two weeks before our main honey flow I slip a queen excluder under the upper story. About four days later the colonies are again examined, and what queens are above are found and put in the lower story. In about six to eight days all cells in these upper stories are destroyed. The brood is then allowed to hatch and the combs left to be filled with honey, or brood is drawn from these upper stories to build up weak colonies, it being warm weather by this time. At the beginning of clover bloom, which is usually about June 1 to 10 in my locality, all colonies that contain a hive full of bees are given a set of empty extracting combs above a queen excluder. I find that by giving plenty of room early, it retards swarming, if not preventing it in many cases. The strong colonies are then raised off their bottom-boards about half an inch in front to allow better ventilation.

At the home yard I allow natural swarming, the prime swarm being hived on the old stand. If increase is desired the old hive is moved to a new location, but if no increase is desired the bees are brushed from the combs, all cells destroyed, and the brood piled on weak colonies, or piled two or three stories high on colonies having young queens where it is allowed to hatch, and the combs filled with honey for winter feeding, or extracted if not needed for feeding.

At the out-yards I handle the swarming problem a little differently. When the colonies get strong in bees and I think they are going to make preparations to swarm, I set the hive off its bottom-board, putting a body filled with full sheets of wired foundation in its place. I then find the queen and put her in this prepared hive on a frame containing a little unsealed brood. The hive of brood is then set on this prepared hive above a queen excluder. In eight days all cells are destroyed. By this plan I do not have a great deal of swarming, but I have not as yet found any way to prevent it entirely. However, by having the queen's wings clipped, I lose very few swarms.

When our main honey flow is on, as soon as a colony gets its extracting super about two-thirds full of honey I raise this super up and put a super of empty combs under the partly-filled super, using eight combs in a ten-frame super. By using eight instead of ten combs, we get thick combs of honey, which are a great satisfaction when uncapping, besides not having nearly as many frames to handle. As soon as the upper stories of honey are nearly all sealed over, we begin extracting. I aim to have an average of from two to three sets of extracting combs per colony, as we do not do any extracting until the honey is thoroughly ripened and sealed over. We now do all our extracting at the home yard where we have a power outfit, steam, uncapping knife and capping melter. I haul all the honey in from the out-yards in a light auto truck, taking a load of empty combs out when going for a load of honey.

When we extract, our honey is run from the extractor into a large tank holding an average day's extracting. The next morning this tank of honey is skimmed and drawn off into 60-pound square cans. A sample bottle is numbered and filled from each tank drawn off, and all cases of cans from each tank full of honey are numbered to correspond to the number of the sample bottle. By so doing we know just what kind of honey is in any case in the lot without opening a can, by simply referring to the sample bottles. Should there be any variation in color or flavor, we melt some of each lot when puting up cans and pails for our retail trade, so that we have one standard uniform grade throughout the season.

Franksville, Wis.

Beetles and Beekeeping

BY JOHN H. LOVELL.

BEETLES cause much loss to fruit-growers, florists and beekeepers. The cherry weevil often destroys the crop of plums and cherries, the rose-chafer strips the rose bushes of both flowers and foliage, while many beetles consume pollen and nectar. In New England I know of 234 species which visit flowers; but fortunately for bee culture this is only a small part of

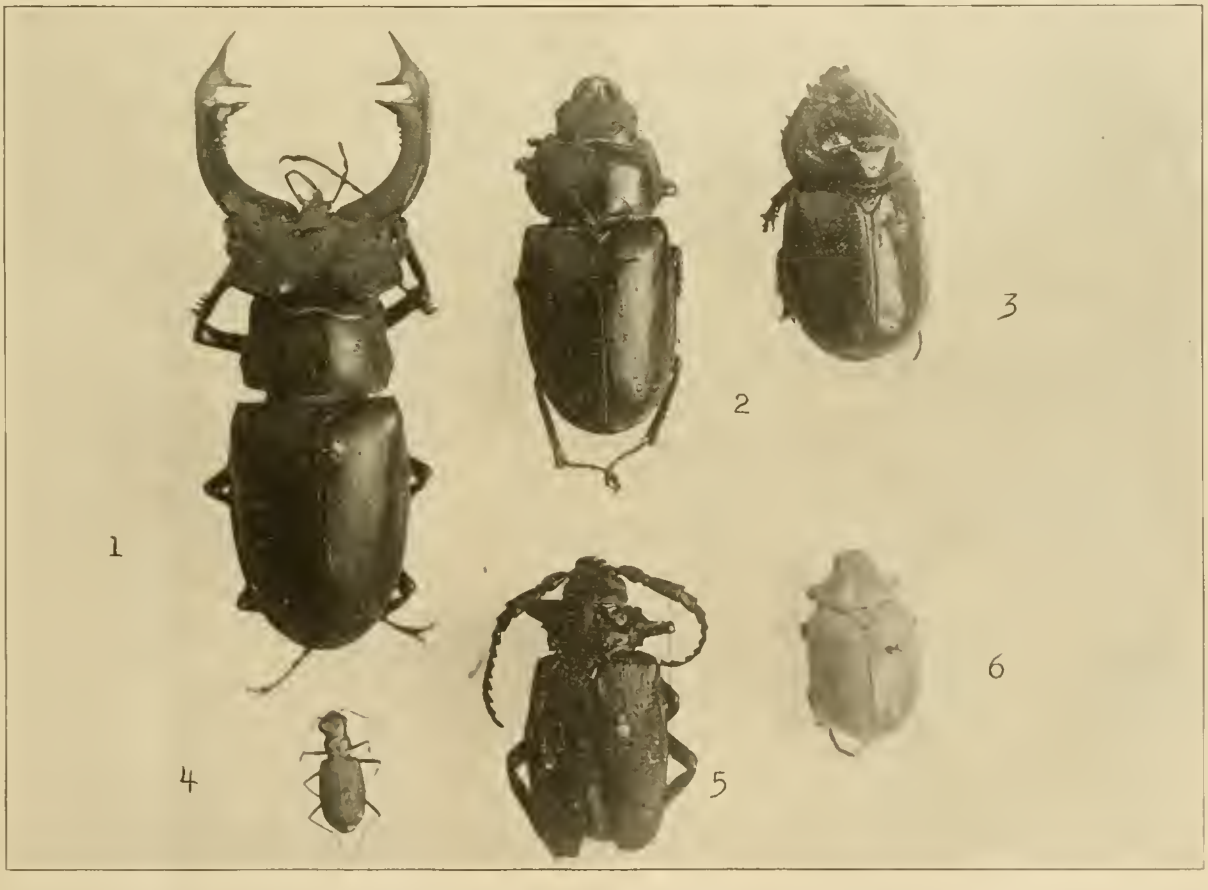

FIG. 1.—Beetles which never visit flowers. Stag beetle, *Lucanus cervus*. 1. Male. 2. Female. 3. Horned beetle, *Orycus nasocornis*. 4. Tiger beetle, *Cicindela 6-guttata*. 6. *Prionus laticollis*. 5. Goldsmith beetle, *Catalpa lanigera*.

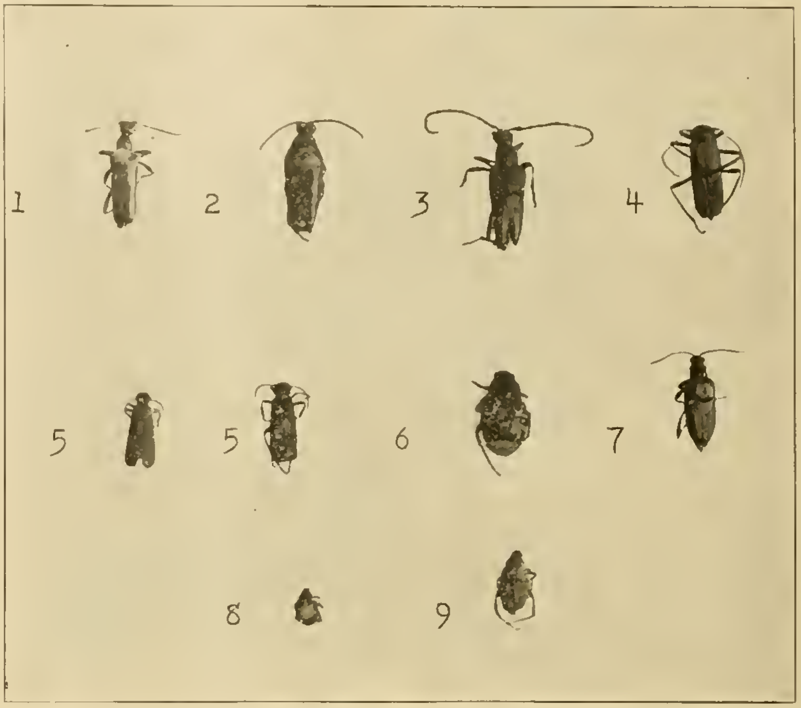

FIG 3.—Flower-visiting beetles described in this paper. Long horned beetles: 1. *Leptura vitata.* 2 *Typocerus velutinus.* 3. *Leptura canadensis.* 4. Soldier beetle, *Chaulibgnathus pennsylvanicus*, 5 Blister beetles, *Epicauta pennsylvanica.* 6. *Trichius affinis.* 7. *Donacia piscatrix.* 8. Blue-flag beetle. *Mononvchus vulpeculus.* 9. Rose-chafer, *Macrodactylus subspinosus*

the total number in this region. At a moderate estimate there are at least 4000 species of beetles in the New England States, so that less than 6 per-cent or about 1-16 live partly or wholly on flower food. This is fortunate for many of them are such voracious feeders that, if they all attempted to resort to flowers, there would be little left for the bees.

But why is it that so few comparatively feed on pollen and nectar? Their habits and forms in many instances answer this question; the tiger beetles and ground beetles are carnivorous and live almost wholly on the ground; while the water tigers are aquatic and also predaceous. Many forms are scavengers, and live on decaying animal and vegetable matter. Among the latter are the tumble-bugs, or scarabæids, so famous in art and Egyptian mythology. The male and female make little balls of dung, which together they roll long distances and bury in the earth to provide food for their offspring—this is one of the few instances among insects, says Comstock, in which "the male realizes his responsibility as a father." Very large beetles. of round stout forms with short legs are too awkward and clumsy to easily visit flowers; for example, I have seen a lady-bug try to climb a smooth flower stem half a dozen times before it finally succeeded. (Fig. 1.)

Moreover most flowers have the nectar concealed where it is beyond the reach of beetles, which, with few exceptions, have very short tongues; consequently, they are usually found on open flowers with visible or nearly visible nectar, as the plum, cherry, pear, shadbush, cornels, strawberry, and goldenrods. On the meadow sweet 42 different kinds have been captured, on the choke cherry 43, on the goldenrods 30, and on the Viburnums 81, while in Virginia 58 kinds have been collected on the Jersey tea (*Ceanothus*). Truly the beekeeper would have reason to be anxious if the nectar were easily obtained in all flowers, for in the case of the plants mentioned not only are there many species of beetle but the blossoms are loaded with their numbers.

Naturally beetles which feed on vegetation, since they are often in the vicinity of flowers, are more likely to visit them than those which are carnivorous; but this does not hold true of the leaf-chafers, which are chiefly night fliers and devour such an enormous quantity of foliage that the flower food available would be wholly insufficient for their wants. Some carnivorous beetles, like the lady-bugs, show a preference for pollen, probably because it resembles the animal food, in its chemical composition. to which they are accustomed; while others like the wood-borers prefer nectar. There are two very remarkable genera (Gnathium and Nemognatha), which live wholly on nectar, and have a long tongue like that of a butterfly, except that it cannot be coiled up, but must be carried either in front of them or under them. They of course are able to suck nectar from tubular flowers (Fig. 2). At first thought it seems strange that other beetles have not also acquired a suctorial tongue, since it is common to all the butterflies and moths; but probably the beetles did not begin to visit flowers until it was too late for them to be easily modified.

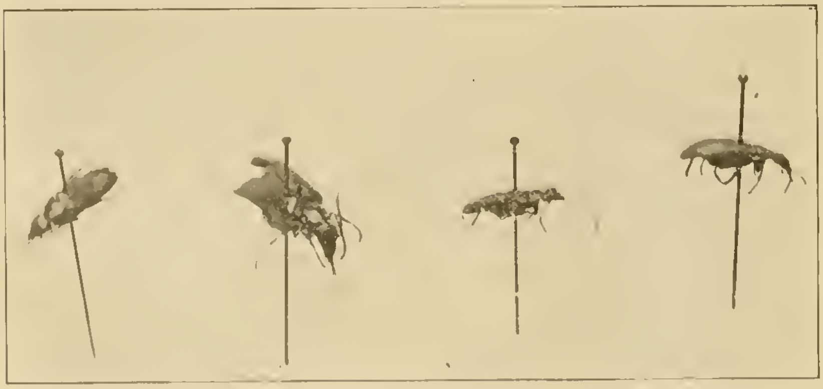

FIG. 2—Beetles with a tongue like that of a butterfly belonging to the genus *Nemognatha*. Among the 100,000 or more described species of beetles, only two genera (*Nemognatha* and *Gnathium*) have a long, sucking tongue.

Many beetles pass their entire life on a single plant species. The larvæ of Donacia piscatrix mine in the leaves and stems of the yellow water lily, while the adult beetles flourish within the floating flowers; another species of Donacia attaches its cocoons to the base of the stems of the marsh marigold, and when the flowers open they emerge and climb the stems and live in plenty, half buried among the stamens; the familiar asparagus beetle eats the leaves of the cultivated asparagus, and the beetles visit the flowers.

The blue flag beetle (*Mononychus vulpeculus*) passes its entire life on the blue flag, and is most common during the blooming time of the flowers. It is inactive in the bright sunshine, says Needham, and will dodge around the base of the flower like a squirrel around a branch when a hand approaches, but will rarely fly. "With its beak it sinks a shaft in the nectariferous tissue, nibbles a little, makes another hole, and another and another, until the nectar is left flowing from many punctures, attracting swarms of insects of all sorts." In one instance while the weevil was gnawing a hole, there were three flies facing it and another on its back, "crowding one another like pigs around a trough." The eggs are laid in the seed capsule, the larvæ feed on the young ovules until they undergo their transformation into beetles, and finally in the fall the bursting of the capsule sets free both the weevils and the seeds (Fig. 3, No. 8.)

Among the numerous beetles found on the goldenrods are certain dull black, oblong species, which when dried and ground into powder may be used for blister-plasters—they are the blister beetles. At times they appear suddenly by bushels and destroy in a few days large patches of potatoes and tomatoes. The larvæ are brood-parasites on bees, grasshoppers and other insects. When they first hatch they are active, louse-like forms called *triangulins* because each leg terminates in three claws. The eggs are laid on the ground near the stem of a flowering plant, and as soon as the triangulins are out of the egg they climb to the flowers, where they wait for the arrival of some insect.

Unfortunately for them they are unable to recognize their hosts, and jump aboard the first conveyance that comes along, whether it is a bee or a fly, with the result that they are often carried far away from the nests they are seeking to reach. There is nothing for them to do but to keep on trying until they either die from exhaustion, or by a happy chance lay hold of the right insect. Hundreds do perish, and to compensate for this loss the female lays some 2000 eggs. If, however, a triangulin is carried to the nest of a host bee it feeds on the pollen until it is transformed into a beetle. The adventures of a triangulin are analogous to those of a grain of pollen. Wasteful as is this method it succeeds much better than would seem possible (Fig. 3, No. 5).

The long-horned beetles, or Cerambycidæ, are more important as flower visitors than any other family of the Coleoptera. The larvæ are wood-borers, and many of the genera in the adult form live wholly on flower food, as Leptura, Typocerus and Strangalia. They prefer nectar to pollen, and in 41 cases I found species of Leptura feeding on nectar, and in only two eating pollen. Beetles often use tubular flowers as places of refuge, hiding in the closed gentians, or reveling for several days on the pollen and nectar of the huge magnolia flowers before they fully expand (Fig. 3, No. 1).

In these war-like times we of New England should not forget that a host of June-bugs once put British soldiers to flight near Boston. In John Trumbull's epic poem "M'Fingal," it is stated that, absurd as it may seem, it was a fact that some British officers, soon after Gage's arrival in Boston, while walking on Beacon Hill, shortly after sunset were greatly frightened by the sound made by flying June-bugs, which they took to be the sound of bullets. They left the hill in great haste, alarmed their camp, and later wrote home to England terrible accounts of being shot at with air guns.

"No more each British Colonel runs
From whizzing beetles as air-guns;
Think horn-bugs bullets, or through fears
Musketoes takes for musketeers."

As pollinators of flowers the beetles are of little significance. The enormous devastation of foliage and blossoms, the absence of hairs for holding pollen, and their inactivity and indefinite manner of flight are factors which greatly reduce their value as pollen carriers. There is no reason to suppose that the structure of flowers would have varied in any way had the Coleoptera never acquired the habit of anthophily (love of flowers).

Waldboro, Maine.

The Queen-Bee—Is Egg-Laying Regulated by the Bees?

BY E. M. COLE.

I BELIEVE egg-laying by the queen to be practically automatic, and regulated largely by the amount of nectar brought in from the fields or manipulated by them in any way. I doubt if a nucleus ever reasons, "We are not strong enough to stand the rigors of winter, and must keep up brood-rearing," or if the queen decides, "My family is too small, let us increase it;" but that the queen begs her daily bread whenever she can, and will always be supplied with predigested food if the colony is reaping a harvest, or is handling honey in any way, and whenever she is so supplied, egg-laying is involuntary on her part. I think the construction of the queen's ovaries shows this, and whenever the supply of food is cut off egg-laying ceases.

I imagine the difficulties of hastening egg-laying in the spring by feeding or having it start up or continue in the fall, if egg-laying depended upon the inclination of bees and queen, instead of being involuntary on their part; the bees always willing whenever manipulating honey, to supply the queen with the proper food, and the queen's ovaries always responding to the stimulus.

Father Langstroth is emphatic in the following: "Some apiarists have supposed that the queen-bee has the power to regulate the development of eggs in her ovaries, so that few or many are produced, according to the necessities of the colony. This is evidently a mistake; her eggs are formed without any volition of her own, and when fully developed must be extruded. When the number of workers is too small to take charge of all her eggs, or when there is a deficiency of bee-bread to nourish the young......she simply extrudes them from her oviduct, and the workers devour them as fast as they are laid." "Hive and the Honey Bee," 1st edition, page 46, 47.

Both the "A B C in Bee Culture" and "Langstroth Revised" assert that in outdoor wintering, when, during a cold spell, the bees have consumed all the honey within their reach, they will perish unless a warm spell comes and enables the cluster to *move over* to their stores. I believe this is an error, and that the cluster rarely if ever moves over to the honey, but shifts as much honey as possible *over to the brood-nest*, and right here early egg-laying will begin and continue as long as the bees are able to renew their supply; the number of eggs laid depending upon the amount of honey handled, the quantity of food the colony is large enough to supply, and the vigor of the queen.

Bees are slow to uncap honey except for their own use, but will always use this open honey to nourish their brood, and as the season warms up, more and more honey is uncapped and moved over to the brood nest. It is rapidly consumed by the bees and brood, and as the hatching bees add their strength to the colony, the supply of food for the queen is larger and egg-laying steadily increases.

The early honey-flows add still more to the food supply and egg-laying is on in full swing, and will continue as long as the flow is on, or the bees are engaged in ripening up or rearranging their stores. Brood-rearing does not necessarily increase during the honey-flow, and may even diminish, although egg-laying may continue heavily. Father Langstroth says, "Hive and the Honey Bee," page 203: "She may often be seen restlessly traversing the combs seeking in vain for empty cells until, finding none, she is compelled to extrude her eggs only to be devoured by the bees."

It has been remarked that when an apiary is moved to a distant location egg-laying is often begun. I think it would be automatically; the continued jarring and disturbance causing the bees to fill up on honey, thus providing more prepared food for the queen.

I have read that when the queen is idle she must supply herself with honey from the cells. I believe it is true, and that she can lay few if any eggs when compelled to digest her own food. As the honey-flow slackens and stops, and the bees finish ripening and capping their stores, the amount of prepared food the queen is able to get diminishes and egg-laying automatically decreases and finally stops. "How much longer, if any, does a young queen continue to lay than an old one?" I doubt if any longer under like circumstances, the difference being in the *quantity* she is able to lay. In a strong colony egg-laying might even discontinue earlier than in a weak one, having sooner ripened up and capped their honey and consumed their open stores.

Egg-laying will also continue when there is a large amount of uncapped honey in the supers which the bees are allowed to carry below. So I believe egg-laying to be involuntary, neither bees nor queen taking any thought of the matter, the bees being always willing to supply the queen with predigested food whenever gathering from the fields or manipulating stores in any way, and her ovaries developing eggs whenever she is so fed. I also believe any seeming departure from this can always be squared with it, if all conditions in the hive are known.

Audubon, Iowa.

[Mr. Cole has evidently studied the matter very thoroughly, and his article is to the point. He is right in believing that the cluster rarely moves over to the honey, when the honey in the center is all consumed, and we agree with him that the bees shift it over to the brood-nest, and that it is this shifting which helps start the queen to laying, but when the weather is too cold to allow them to move their cluster to the outer combs, it is also too cold for the individual bees to bring it from the outer edges to the center. This shifting can take place only in mild days. That is why we said in "Langstroth Revised," page 341: "When all the food in their reach is consumed, they will starve if the temperature is too cold to allow them to move their cluster to the parts of the combs which contain honey; hence *if the central combs of the hive are not well stored with honey, they should be exchanged for such as are, so that, when the cold compels the bees to recede from the outer combs, they may cluster among their stores.*" The words in italics are literally from page 336 of the third and subsequent editions of Mr. Langstroth's original work. A similar thought and advice are to be found on page 323 of his second edition, while the first contains only a mention of the possibility of their "starving in the midst of plenty," on page 104.

We would suggest that it is out of the question for the bees to move their cluster when they have any brood at all in the cells. In such cases they can move only the honey, and if able to do so they induce the queen to breed, as so aptly asserted by Mr. Cole. —EDITOR]

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Introducing Queen Mated in the Same Yard

BY SOUTHWESTERN BEE CO.

OUR apiary manager announces that he is mating his queens this spring in 2-frame nuclei. The frames are regular Hoffman brood-frames as used in our brood-nests, and are therefore wholly interchangeable. Whenever he finds a failing queen or a colony not doing satisfactory work he kills the queen and takes out two frames containing no brood. He then splits the brood-nest in the middle, making room for two frames. He now takes the two frames from his nucleus with all the bees attached to them, the more the better, and places the entire nucleus, bees, queen and all in the open space in the dequeened colony. By this method the work of the colony goes right on without any interruption. No time is lost, and the new queen is accepted without any trouble whatever.

In case of a laying worker colony he puts all the comb containing laying worker brood to one side of the hive and the two frames with the bees and queen from his nucleus on the other side, with empty combs between. In a few days the new queen will begin laying in the first of the empty combs, and then more and more until gradually she will absorb the old colony. Where the laying worker colony was exceptionally strong, he did not disturb the brood-nest, but put his new queen and her two frames in the super. In either case we have had perfect success. The method certainly beats our old plan of carrying the hive away a hundred yards and shaking the bees upon the ground, or the more heroic remedy of distributing the combs about among strong colonies in the apiary.

In either of the above operations, the two frames in the nucleus must not be separated when placed in the new hive, and it is important to see that the bees have enough honey in the combs so that they can fill up well. Do not smoke the nucleus if you can help it. We hardly ever use smoke in taking out the two frames with the queen. It is best to keep the queen quiet so that she will not run about. Smoke is to be used with the dequeened colony and also with the laying worker. The new bees and queen being full of honey and therefore quiet, will stay on the two frames. Should any trouble or excitement ensue from the introduction, the new queen is protected by her own bees and will keep on laying.

San Antonio, Tex.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

First Queen Destroys Other Cells

Will you explain what is to me still a contradictory mysticism. *A.* It is said that the first queen out destroys the other queens as they emerge; hence, there should *not* be after swarming.

B. Yet the very fact of there being after swarming shows that the first queen does not stay to destroy subsequent ones, but one flies off after the other.

PENNSYLVANIA.

ANSWER.—There is nothing mystical nor difficult of understanding when you get the whole story. When a virgin emerges from her cell, her first care is to find the cells of her younger royal sisters with full intent to murder them in their cradles. With such frenzy does she seem possessed in this regard that I have many a time seen it the case that when a sealed cell was caged the virgin after gnawing her way out would dig a hole in the side of the empty cell, just as she would if a live virgin were in it. Always you may count on this murderous impulse on the part of this royal young personage, and if she were left to have her own way there would never be any after swarming.

Now, however, comes the part that you have left out. She does not always have her own way by any manner of means. In fact, calling her a "queen" is a neat little fiction; the term "slave" would be about as appropriate. The government in the hive is not a monarchy, but a democracy of the most democratic sort, run by a lot of suffragists, and the male person has no vote. If the workers vote that the time has not yet come for the destruction of the young rivals, then a committee stands guard over each cell, driving away the young queen as often as she makes an attack. In the meantime several of the occupants of the cells may become sufficiently matured to emerge, but they are not allowed to do so. The guards maintain a neutrality strict enough to suit President Wilson; they will not let the young queen get out of the cell, although she may have the capping of her cell grawed away all but a slight hinge; and no more will they allow the queen at liberty to get at the defenseless sisters in their cells. The free queen runs about frantically from one cell to another, at intervals crying, "Pe-e-e-ep, pe-e-ep, pe-ep, peep, in a shrill voice, each shorter than the preceding one, and then the prisoners reply in a coarser tone, and apparently hurried "Quahk, quahk, quahk," and this piping and quahking will be kept up until a swarm emerges with the free queen.

Then it depends upon the vote of the suffragists what further shall be done. If they vote for further swarming, a single virgin is allowed to emerge from her cell, and she in turn will go through the same performance as the one who preceded her. But if the vote is for no further swarming, then the guards relax, allowing the cells to be attacked, and also allowing their inmates to emerge. Then there will be a free-for-all fight, one after another each queen will be killed until only one is left, the victor in each case coming off entirely unscathed. Sometimes a number of the virgins will go off with the swarm, where they can settle their differences as well as if they had stayed in the old home.

Winter Loss—Glass Panels

1. What is the cause of a colony of bees dying in the winter with plenty of honey in the hive? It seemed to be in good shape when it went into winter quarters.

2. If a colony of bees lost its queen in the winter, how long would it live?

3. What is the safest method of dividing a colony and introducing a laying queen that comes from a distance into the hive of the increase?

4. Will it interfere with a colony of bees in winter quarters to have an observation glass in the back end of the hive with a panel on the outside? MISSOURI.

ANSWERS.—1. It may be that the cluster of bees was in the the center with honey on both sides; the honey was all eaten out of the center, and the bees drew to one side; they ate all the honey on that side and a long cold spell prevented their going to the other side until they starved to death, leaving plenty of honey in the hive.

2. If she were lost in the winter, the supposition would be that she laid as long as usual in the fall. The bees would become less and less in the spring, and if they did not desert the hive the last of them might be dead perhaps some time in May.

3. It is generally supposed that introduction is likely to be successful with the usual queen-cage plan; but you can make it more safe than the average. Take half, or more than half, of the combs with their adhering bees, and put them in a hive on a new stand. Wait until next day, when the field bees will all have gone back to the old hive, and then introduce your queen in this new hive. You see there are no field bees left, and it's the field bees that raise the mischief with a new queen.

4. Yes, any disturbance in winter is not so

good as perfect quiet, although the colony may live in spite of the disturbance.

Two Stories for Brood—Granulated Honey in Sections

1. I would like to ask a few questions concerning that large hive. When do you take that second hive off, and don't you have trouble with brood at that time or do you use an excluder?

2 Do your bees go to work in the supers as readily as when only one hive was used?

3. I had a large number of partly filled sections last season, and the honey granulated before I found time to extract it. Can I put these sections into the supers in that condition or would you advise setting them out for the bees to clean out before using?

4 I have thought of purchasing a few good queens for some of my colonies, but have been a little cautious for fear I might introduce some disease. Do you think such a thing possible? PENNSYLVANIA.

ANSWERS.—1. I use 8-frame hives, which can hardly be called "large hives," so I suppose you refer to my using two stories as brood-chambers, making practically a 16-frame hive. I put on a second brood-story whenever the first becomes crowded, unless I take away some of the brood to use elsewhere. I reduce to one story at the time of putting on supers for surplus. There is so little trouble with brood in sections that I don't think it worth while to use excluders. But if I didn't fill the sections full of foundation I should have to use excluders.

2. Yes, perhaps more readily.

3. Don't think of putting them on again unless you can have the honey cleaned out of them thoroughly by the bees, and next time have that done in the fall.

4. There is little danger, and probably none, if you kill the escort bees.

Greening's Plan for Comb Honey—Making Nuclei

1. At first glance of the article by Greening, in September, 1914, issue, page 310, it looked mighty well, but now it looks a little dubious, especially for a comb honey producer, and what I want to know is to what extent do you consider it well advised to try that method, and especially what further things to observe for comb honey in case of following the Greening way. Mr. Greening seems essentially to be an extracted honey man.

One snag about the whole plan is that what is so extolled in the aforesaid issue of the American Bee Journal, is by paragraph 472, page 246, 1911 edition, Dadant-Langstroth bee-book condemned.

2. I want to see this year whether I can make nuclei. I have four 10-frame hive-bodies each especially fixed for the nuclei. Will it work just to take the frames with brood and queen cells and honey from hives in sets of three and put them into the hive-bodies fixed with divisions that I have; then, when one wants to use a nucleus, seeing that the queen in one is all right and has laid eggs, put the same on stand of the colony to be requeened, and that colony next to the nucleus (now on previous stand of the colony), and gradually, say every second day hereafter, combs of brood into the nucleus hive without or with adhering bees, but latter only when sure about not having the old queen? At last one could shake or dump the bees in front of the nucleus hive and take the old hive away altogether.

I wish I knew how to exclude the old queen without having to look for her. I am lamentably poor in finding queens. What about field bees killing the bees of the nucleus as they came in? PENNSYLVANIA.

ANSWERS.—1 It is not a gracious thing to make objection to a plan which succeeds so well with the planner; and sometimes our judgment may be wrong, if we judge without actually trying. So all I can say is that I should not have faith enough in the plan to give it a trial for comb honey.

Mr. Greening says: "Working for comb honey would be rather more difficult. But I also do some of that." He doesn't say how he adapts his plan for comb honey, and I don't know how he does. But for extracted honey he should have good success by giving such abundance of room and shifting the brood; although it seems there might be a little too much of a good thing by giving so much room over the brood nest for the bees to keep warm before the honey-flow.

The snag you run against, which you say is not endorsed by Dadant's Langstroth, refers to his manner of increase. A serious question as to that refers to the quality of the queen that will be reared He puts a frame of brood in an empty hive, and nothing is said about any bees being taken with the comb, but the hive is allowed to be occupied by returning field bees. These are bees that have given over all housework, and are in no condition to feed young bees, although they will do so when driven to it. So I should not expect as good queens as with abundance of young bees of the proper age to rear brood.

2. There ought to be no difficulty about having three nuclei in a 10-frame hive with proper divisions, an important thing being that each nucleus be imprisoned for two or three days, so that the bees will not desert. If I understand correctly, your plan is (after the queen is laying in a nucleus) to put the nucleus in a hive of its own, and set that hive in place of a hive containing a colony you want to requeen. Better not; the whole force of field bees will at once occupy the new hive, and it is a pretty sure thing the new queen will be killed. You will greatly multiply your chances of success if you remove the old queen two or three days in advance.

You ought to be able to sift out the queen with an excluder. Here's one way. Call the hive that contains the colony A, and let the empty hive be called B. Brush all the bees from half or more of the combs in A, and put these beeless combs in B. Take A from its stand, and put B in its place. Put an excluder on B, and over this an empty hive-body. Into this empty hive-body brush all the bees from the combs in A. All but the drones and the queen will go down, or may be smoked down, leaving the queen in sight.

[The paragraph of the Dadant-Langstroth book mentioned in the query is by Mr' Langstroth himself. The reader will find it in any copy of the 3d or subsequent editions of the original "Hive and Honey Bee," pages 150-1 and foot-note. There is not any doubt that queenless colonies build only drone combs.—C. P. D.]

Breeding from Choice Queens

1. In one of my colonies of bees I have a very prolific queen which I desire to breed from and requeen five other colonies Later I wish to divide one colony into two or three frame nucleus and rear queens from this same stock. Please advise the best method for me to pursue.

2. Please explain the meaning of the following; Breeding bees according to the "reflex theory." The danger of gypsy moths mating with queens. KENTUCKY.

ANSWERS.—1. It's a bit hard to know just how to advise, there are so many ways of doing and so much depends upon circumstances, previous experience, and perhaps other things. In spite of the fact that I don't like advertising in this department, I will say that I think you would get information enough on this one topic alone to make the purchase of "Fifty Years Among the Bees" a profitable investment. But I'll give you one way that ought to be successful, even if you have but little experience. Strengthen the colony with your choice queen by giving it brood with adhering bees from other colonies, so it will be the first to swarm. Call it A, and name the other colonies in the order of their strength, B, C, D, E, F. When A swarms, set the swarm on the stand of B, and set B in a new place. A week later you can cut out the queen-cells and give them to C, D, E, and F, having dequeened these a day previous. If, however, you want to operate in an easier way, after you have put A in place of B, it will be strengthened by receiving all the field bees of B as they return from the field. Then it will be practically certain to swarm when the first virgin emerges, and you can leave the swarm on the same stand from which it issued, and set A in place of C. Repeat the same thing each time A swarms, setting it successfully in place of D, E, and F.

The author says "this is a typographical error, and should read gypsy *drones*."

The Chandler Plan of Swarm Prevention

I can scarcely call myself a beekeeper, even a back-lotter, as I have only four colonies This year I would like to build up to ten, eight at least, and get as much honey as possible. I planned to do this by preventing swarming until the main flow (white clover) is almost over, then making artificial swarms.

1. Would this be better than to let them cast natural swarms when they wish? I intend to use the Chandler plan of swarm prevention, as described in the Bee Journal for September, 1913. This is to replace the super with an empty hive-body containing a little drawn comb, and brood and starters in the other frames. This is separated from the brood-body by a screen, and projects forward a little farther than the brood-body. A cone escape is put on the entrance so that the bees returning will have to crawl up the hive front into the upper body. Leave it this way about four days. The queen will destroy the queen-cells and the swarming fever will be cured.

2. My objection to this would be that a close watch must be kept for queen-cells so as to know when to start it. Is there any better plan for comb honey?

3. Would it be practicable to divide each two colonies into five by forming two colonies out of the old bees and three out of the equal parts of the brood?

4. Would the divisions have a better chance to build up strong for winter if they were given queens or sealed cells instead of letting them rear queens from brood?

5. My plan is to form a 3-section nucleus, like a mating nucleus, then dequeen a short time before queens would be needed. Would the nucleus start queen-cells?

6. Would it be self supporting or would it have to be fed?

7. I am certain that some where in your answer you will use the proviso: "If the colony is strong." Mine have never been strong according to my notions, but have done pretty well considering the amateurish management. What is a good rule to go by in this problem? I hesitate to bother you with such questions. MINNESOTA.

ANSWERS.—1. I don't know. It would certainly be less trouble to let them swarm, which they are pretty certain to do if the season is good, and if you set the swarm on the old stand it will be most likely to give you a fair return in honey. You would thus feel a little surer of having all in good shape for winter than if you divide later.

2 It isn't easy for any one else to say what is best in your case. You can yourself decide best after carefully studying what is said in the books

3. Yes.

4. Certainly. More than that, if you trust to a nucleus to rear a queen from brood, the chances are that you will have a very poor queen. Nothing but the best in the way of queens ought to be counted good enough.

5. Yes, a very weak nucleus will start cells, but I wouldn't give a cent apiece for the queens reared.

6. That depends upon the strength of the nucleus, and more particularly on the sea-

son. Give it time enough and flow enough, and even a very weak nucleus may be all right for winter.

7. If you have five frames well filled with brood at the beginning of white clover, I should call it a good colony, and anything beyond that might be called strong. Don't be afraid I will be bothered. That's what I am here for.

What to Do With Last Season's Unfinished Sections

I have just finished reading "Fifty Years Among the Bees," and feel so well acquainted that I am going to ask a question which you may answer in the American Bee Journal if you will kindly do so.

I have a lot of sections that were on the hives last season, but owing to the drouth, which caused a sudden stop in the honey flow, they were not completed. Some of them contained some honey, which I allowed the bees to remove last fall, and merely started to be drawn. (They had had full sheets of foundation in the first place.)

Now shall I use these *as they are* this season or will there be too much mid-rib to make the best honey? I have often used the "go backs" for baits, using from one to four in a super, but I have 20 to 30 supers full now. SOUTH DAKOTA.

ANSWER.—If you have unfinished sections that are fall-emptied and in good condition, use them and be exceedingly thankful for every one you have. Bees do not add to the mid-rib, no matter how long sections are left on the hive; but there is danger if they are left on too long in the fall that the bees will plaster them over with propolis, in which case there is nothing to do but to cut out and melt them up.

Queens and Nuclei—Introducing

1. How may I rear choice queens on a small scale?

2. Can you give me a good method for making nuclei for a rapid increase of colonies?

3. What is a safe method of introducing virgin and laying queens to replace old or queenless colonies? MINNESOTA.

ANSWERS.—1. To go fully into the minutiæ of queen-rearing would be beyond the scope of this department, but I will give one plan that should give you the best of queens. Of course, if you rear choice queens you must have a choice queen from which to rear them. The colony containing this queen should be built up strong, if necessary, by the addition of brood and bees from other colonies, so that it shall be the first to swarm. About eight days after it swarms there should be a fine lot of queen-cells that you can utilize to the best advantage. The more nearly mature they are the better, but if left too late there is danger that some of them may be torn down by the bees. If you are willing to take the trouble, there is a plan by which you may have them fully mature. When the colony swarms, hive the swarm on a new stand, leaving the mother colony comparatively strong. You might even return some of the bees of the swarm to the old hive. Beginning about a week after the issuing of the swarm, go to the hive each evening after the bees have quieted down, put your ear to the side of the hive and listen for the piping of the young queen, which you will hear as soon as she issues from her cell. You will have no difficulty in distinguishing her sharp, clear tones, even if you have never heard a queen pipe before. The other virgins in their cells will quahk in reply.

Now go to the hive next morning and cut out all cells, but look sharp that none of the virgins escape which have gnawed open the capping of the cell, but are kept prisoners by the workers. In "Fifty Years Among the Bees," I have very fully detailed the way in which I rear queens for my own use, a plan I would use if I had only a half dozen colonies. I think it might pay you well to get the book just for that part alone.

2. Just what is the best way depends upon circumstances, but here is one way. First let me say that one difficulty in making nuclei is that if you put into a hive a good nucleus without any precaution, the bees are likely to desert it. So put an excluder over a colony, the stronger the colony the better, and over the excluder put an empty hive-body. Into this empty hive-body put frames of brood with their adhering bees, taking these from any colonies that can spare them, taking from each one, two, or more frames, according as they can be spared. If you have enough bees you can pile up another story or more.

A week or eight days later take these frames of brood and bees, using three of them for each nucleus. They will be likely to stay where they are put, but to make sure you can plug the entrance with grass or green leaves, so that the bees can dig their way out if you forget to open the entrance in a day or two. If rapid increase is what you are after, you cán take from each of these nuclei, three days after you have formed them, one frame of brood and bees each, and use them for other nuclei.

3. There are different ways that are safe enough for practical purposes, but I'm not sure that I know more than one way that is absolutely safe. Put frames of brood over an excluder over a strong colony. Eight days later all the brood will be sealed. Put over a strong colony common wire-cloth, and over this a hive-body, into which you will put your frames of brood after carefully brushing off every bee from them. Into this put your queen. Of course she is safe, for there isn't a bee in the hive with her, but young bees will be hatching out every minute which have known no other queen, and of course they will be friendly. Understand that this upper story must be perfectly tight, so that not a bee can get in or out. Five days later set this upper hive on a new stand, allowing at first an entrance large enough for only one or two bees at a time. If you look an hour or so later, you may have the pleasure of seeing bees only five days old carrying in pollen.

Soil Influences Honey Yield

1. Does honey-dew come any time of the year? My bees seemed to be storing something in the warm days of February, before there were any blossoms of any kind.

2. Why is it that some plants produce honey in some places and don't in others? Cotton, for instance, yields heavily in both north and south Georgia, but does not yield honey, or the bees do not get it, just a little north of the center of the State, among the red hills.

3. Can you make 20 percent increase by going through the apiary and making a colony at different times without hurting the honey flow?

4. Can you control swarming entirely by keeping all queen-cells torn out? GEORGIA

ANSWERS.—1. Honey-dew may come almost any time plants are growing; but I suspect your bees are working on something else than honey-dew in February.

2. I don't know; only I know it is so. The soil or the elevation may have something to do with it.

3. I think it is quite possible that it might be done without diminishing the crop, at least in some cases. Just enough strength taken from each colony to prevent swarming might increase rather than diminish the total harvest.

4. Cutting out the first queen-cells wil generally delay swarming. Continuously cutting them out will in some cases prevent swarming altogether, but generally not.

Using Old Combs

1. I lost a few colonies last fall. They seemed to be all right when I took their supers off. They had a little honey in them. Shortly afterwards there were neither bees, honey, nor brood. What was the cause?

2. I have the brood combs, they are black. I also have some that the moths have been in, that I lost earlier. Are those combs any good, or had I better throw them away? I thought I could use them for natural or artificial swarms. KANSAS.

ANSWERS.—1. They may have starved or absconded for want of food, or they may have been robbed out.

2. If not too badly torn by worms they are all right to use again.

Supersedure—Queen-Breeders

1. How is it that bees neglect to supersede their old queen when there are drones to mate with the young queen, as this has happened to me several times late in the fall?

2. How is it that most of the queen-breeders advertise queens for sale and none can supply the beekeeper with queens early, but only want their orders booked early, and maybe have the queens forwarded the latter part of May or middle of June; the time when every beekeeper has plenty of queen material to supply himself?

3. I make a nucleus to save the queen. Is this right or not? KANSAS.

ANSWERS.—1. If I understand correctly, you have had queens superseded, or at least have had them die in late fall or early spring when there were no drones, and your question is why they didn't supersede them earlier, when plenty of drones were on hand. I don't know. It is possible that some accident may befall a queen, and of course the bees could not foresee this. It would seem that bees recognize the trouble when a queen begins to fail, and supersede her; and it is possible to conceive a case in which there was no sign of failure while drones were still present, but an unusually rapid failure after they were gone. The fortunate thing is that such cases are rare; nearly always a queen is superseded with abundance of drones present.

2. Don't be too hard on the queen-breeders; you may sometime be one yourself. It is all right to book orders to be filled as fast as possible, provided it is an understood thing that they are to be so filled. If, however, he advertises to send queens by return mail, and then delays, he's not giving you a square deal. It looks a little as if your idea was that when you order a queen you should always get it by return mail. It would be difficult for a man to treat all his customers in that way. He would be obliged to have a stock of queens on hand before he made such an agreement; he would have no way of knowing how many to have in advance; and might be overstocked at a loss. You can, however, say when ordering, "If you cannot send a queen at such time, return money," and then there could be no complaint on either side.

You say they send queens when every beekeeper has plenty of material to supply himself. Pray tell me how a queen-breeder can have material earlier than the beekeeper. You and I can have material as early as any, and can rear queens as early; but we may want to buy queens for other reasons. Moreover, I wouldn't give 30 cents a dozen for queens reared too early, no matter who rears them.

3. Yes, making a nucleus to keep a queen in is good practice.

American Bee Journal

CITY APIARY OF H. E. HESSLER AT SYRACUSE, N. Y.

Reports And Experiences

Notes from Mr. Lovell

The article and illustrations on the Visconti family in the American Bee Journal for December were especially valuable. To one acquainted with their warlike history in the 14th and 15th century, their attention to beekeeping and the culture of the silkworm seems almost anomalous; but as history deals largely with wars, etc., very likely they even then gave attention to agriculture; certainly Lombardy was known as "the garden of Italy."

We are having a very mild January, and bees are wintering well. Mr. Pellett's paper on honey-plants with its suggestions of another summer's work is exceedingly welcome.

JOHN H LOVELL.

Waldoboro, Maine, Jan. 18.

The Water Treatment for Foulbrood

As soon as foulbrood is discovered in any colony of ordinary strength, the diseased colony should at once be treated by placing in a tank with sufficient water as deep as the bottom-board; tank to be perfectly level, and the water deep enough to keep the bees from escaping from the infected hive. Take a clean hive, with full sheets of foundation, place a wire-cloth upon the top of clean hive and place the clean hive upon the top of the diseased hive in such a manner that the bees can readily work up into the clean hive, putting weights on top of upper hive to keep the lower hive from floating.

Commence pouring water into the tank in a steady stream, so that it will consume about 20 minutes for the water to get high enough to force all the bees from the diseased bottom into the clean top. Continue the water until it is forced to the top of the lower hive.

Great care must be taken to not pour in too much to raise the water above the joint of the lower and upper hive. After this treatment has progressed this far, the bees are absolutely clean and free from any disease. Then take the clean hive, have your bottom-board ready on the same stand as you had the diseased stand, set your clean bees on top of the bottom-board and your treatment is complete

Take diseased colony or the old hive and destroy it totally by fire.

F. R. McCOY.

Idaho.

[Mr. McCoy informs us that he has cured 12 colonies of American foulbrood by this treatment. It is evidently based upon the fact that the bees are not frightened but simply forced to abandon their combs as the water rises. Thus they leave them without filling themselves with honey. As every beekeeper knows, the contamination is spread by tainted honey. If the bees carry any of that contaminated honey with them, the cure would not be complete. It very probably would be insufficient in cases of European foulbrood, since this is usually transmitted by the queen.—EDITOR.]

Sugar Feed Better than Some Honeys

The Bee Journal is again at hand, and as good as usual, but there is one thing I take exception to is the paper on "Wintering Bees," by Lewis Post, at the Wisconsin meeting, where he terms sugar syrup a dope We will have to look into the sugar trust's kind of sugar furnished to Wisconsin, or Bro. Post's mistaken statement. Honey-dew is worse than dope unless bees can have at least one flight a week through the winter; if no flight, there will be dead bees in the spring. But with sugar, either granulated or cut loaf, but no cheaper grade, the bees will winter better than on any honey they may gather, and Bro. Post will be able to prove that, if he will try it, too, Many things are stated that sometimes mislead those that are learning, and lean on those who can state fairly what experiments have done.

I or you can take all the honey away from a strong colony as late as Oct. 15, and give only 15 pounds of cut-loaf sugar on top of frames, placing the bees in two hive bodies for outside wintering or one body for cellar wintering; putting an oil-cloth covering over sugar, an empty super and air excluding packing inside of super and outside packing as other hives are treated, and those on sugar will be the best in spring The same with syrup, only more syrup and the start to feed must be earlier. We have late honey here that causes more or less dysentery, and I have not been able as yet to trace it. The taste to me is as good as buckwheat honey, and I am sure that sugar beats that kind of honey. The difference in our localities might make the difference, or bad sugar. But no excuse will go with me. Sugar beats honey at any time for wintering bees, if given to them by one who knows how, from years of testing the best way. I hope that those who might be caught short of honey late in the fall will not let their bees die for the want of good granulated sugar syrup.

GEO. M. STEELE.

Philadelphia, Pa., Feb. 15.

[There is no doubt that, for wintering, sugar syrup beats honey-dew or honey loaded with pollen grains. These load the intestines of the bees and are deadly, in long confinements. But the Wisconsin people usually have very fine, light-colored honey. We are not astonished that they prefer it to sugar syrup.—EDITOR.]

Folding Sections, Etc.

I want to tell you the way I cut my foundation for sections I have a miter box such as described in "A B C and X Y Z in Bee Culture," but the saw kerfs are as described on page 147 of "Fifty Years Among the Bees;" that is, 3¼, 6½, 9¾, 13, and so on You need no rule to fuss with, and you can cut 15 sheets as quickly as one, although it takes a little longer to place 15 than one, using a little soapy water on knife. This way of cutting foundation one can cut about one-half more in the same time and no risk of

APIARY OF REV. H. L. HART AT BECKER, MINN.

cutting fingers. The miter box should be perfectly square, if one wants the foundation to hang plumb in the sections. I have used starters of various sizes, but find those like you use to be the best. I shall never be content with starters hereafter. I shall use full sheets as you advise.

In putting foundation in sections I have a device of my own "get up," with which I can finish four sections with one handling, top and bottom starters at one handling. I also have a section press of my own devising, which beats anything I ever had, and I have bought several. All I have to do is to sit and fold them, not even putting the dovetail together, as the machine does that part better than any one else could possibly do it by hand, and when they come from the press they are perfectly square.

Columbia City, Ind. Frank Langohr.

The Cause of Drone-Cells

I am using the Hoffman frame entirely, and I am well pleased with it except that I find the percentage of drones reared is rather large. Could you tell me what ought to be the right width of the end-bars so as to give the proper spacing and reduce to a minimum the rearing of drones?

Ernest A. Fortin.

Rougemont, Quebec.

[I do not believe that the thickness or width of the top-bar and end-bars and consequent spacing would have any important influence over the number of drones reared There comes a time in every season, when the queen, especially if she is an old queen, wants to lay eggs in drone-cells. At those times, as noticed by Dr. Miller, myself and others, the bees will purposely leave empty the drone-cells that may exist in the hive, even if such drone-cells are only to be found in the supers. Then the queen will lay in them. If there is not enough room, I believe the bees will cut down the opposite cells, rather than fail to rear drones in these cells,

The only practical method I know of to prevent the rearing of drones is to replace the drone-comb with worker-comb, early in the season. Even then, there will always be scattering drone cells here and there, enough for a few hundred drones in each colony.]

False Parsnip

My bees wintered finely; they were confined to their hives 3½ months without a flight. Last fall I got some large paper packing cartons and packed my bees in them. On Feb. 2, the bees began bringing in honey and bee-bread, and have been doing so ever since the pussy willows and soft maples were in bloom. There is another small plant with a white blossom that is in bloom that the bees get lots of honey from; I will send you some of the plants. The bees work on it the same as they do on buckwheat in old Maryland. James Heron

Ellensburg, Wash., March 15.

[Prof. Pammel, of Ames, Iowa, to whom the specimen was referred, calls it false parsnip (*Peucedanum hendersoni*), native of the States of Washington and Oregon.—Ed]

Milkweed in British Columbia

I notice in the American Bee Journal for March an article on "Honey Plants and Their Value" (page 80), in which the name of Dr. L. H. Pammel, State Botanist, Ames, Iowa, appears, where mention is made of Indian hemp and whorled milkweed (*Asclepias verticillata*). We have a wild flower in this province that grows nearly everywhere and is one of our best honey plants. I am wondering whether it is identical with the above. The local name is milkweed, as it exudes a milky sap when broken or injured. It grows about two feet high and commences to flower about the end of June, and lasts in bloom a long time. The flowers are borne in clusters, small and bell-shaped; in color white slightly tinged with pink, and are strongly fragrant. The seed pods also formed in clusters are about three inches long, something like dwarf beans in miniature The seed, when ripe, is covered with white down very like the fireweed. I sent foliage and flowers of this plant to England for identification, and was informed that it was *Apocynum hypericifolium*, and belongs to Periwinkle family. I find on reference to one of my books on botany that *Apocynum* is also known as Dogbane and Indian hemp. I am told that the Indians smoke Indian hemp. The honey from this plant is light in color and the aroma of the flower is quite recognizable in the taste of the honey. Any information that will establish the identity of this to us important bee-plant will be much appreciated. W. J. Sheppard.

Nelson, B. C.

[The Indian hemp referred to is a species of *Apocynum*. We have two species in Iowa, one, *Apocynum androsæmifolium*, and the other *A cannabium*. The *A. hypericifolium* by some botanists is regarded as a variety of *cannabium*. The English determination is correct. The milkweed *Asclepias verticillata* has cream colored flowers. I do not think it occurs in your section of British Columbia.—L. H. Pammel.]

No Loss Whatever

I have owned and kept bees since 1852, and I never had them do better than the past winter. I put 48 colonies into the cellar Nov. 19, and took them out April 11, all in good condition. John Cline.

Darlington, Wis., April 15.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

Phelps' Golden Italian Bees are hustlers.

Archdekin's fine Italian queens and bees. See larger ad. in this issue.
J. F. Archdekin, Big Bend, La.

Notice W. W. Talley will sell bright Italian queens this season at 60c each, $7.00 per dozen. Safe arrival guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Queens of Quality—I am booking orders for early queens now. Three-banded Italians only. Circular free.
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Italian and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.
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Italian Queens for sale this season at 60c each; $7 00 per dozen. Ready April 15. Safe arrival guaranteed. T. J. Talley,
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Place your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens. John W. Pharr,
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Quirin's superior improved queens and bees are northern bred, and are hardy. Orders booked now. Over 20 years a breeder. Free circular. H. G. Quirin, Bellevue, Ohio.

Golden Italian Queens, about June 1. Untested 75c; half doz., $4.00. Tested, $1.25. Pure mating guaranteed.
J. I. Danielson, Rt. 7, Fairfield, Iowa.

Try my best bright yellow queens. They are beautiful and good honey "getters;" 60c each or $7.00 per dozen. Safe arrival and satisfaction guaranteed. M. Bates,
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Three Band and Golden Yellow Italian Queens. Untested, one, $1 00; six, $4 50 Tested, $2.00, ready April 15. Safe arrival. Send me your orders early,
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Queens—The quality kind, 3 band Italians only. Winners at Hartford and Berlin, 1014. Untested after June 1, $1.00.
A. E. Crandall & Son, Berlin, Conn.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Wanted—To send our list to you of our famous honey gathering and almost non-swarming strain of Golden queens. No better bees of any strain to be found. One fr. untested, $1.00; 6 for $5.00; 12 for $9 00. Write us what you want. T. S. Hall,
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The Secret of Success is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and $1.00 for tested G. W. Moon,
1904 Adams St., Little Rock, Ark.

Queens, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

For Sale—After June 15 Golden Italian queens. Strictly northern bred and hardy, Fine honey gatherers and gentle. No disease, Safe arrival guaranteed. Untested, $1.00; 6, $5.00; 12, $9.00. Tested queen after July 15, 50c each extra.
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Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

If You Need a queen for that queenless colony, you want it as soon as you can get it. We can furnish tested queens by *return mail*. $1.00 each. Three-band Italians, bred for business. No disease. Satisfaction guaranteed in every case. J. W. K. Shaw & Co.,
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Famous North Carolina Italian Queens for for sale. Reared from Howe's best breeders. Mated with Root's, Moore's, Davis', select stock. Free from disease. Untested, one 75c; per doz. $7.50. Select untested, one, $1.00; per doz., $9.00. Tested, $1.25; select tested, $1.50. Breeders, $3.00 and $5.00.
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Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
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I can supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed'
I. N. Bankston, Buffalo, Tex.

California Queens, Nuclei and Bees bred from the best Doolittle stock, ready for shipment at once. Queens, untested. 75c; dozen, $8.00. Tested, $1.25; dozen, $12. Mismated, one year old, 50c; dozen, $5.00. Tested, one year old, 75c; doz., $8.00. Nuclei, 2-frame, $1 50; 3-frame, $2.25; 5-frame, $3.00; 10-frame colony, $4.50. Bees by pound, ½ lb., 75c; one lb., $1.00. Add prices of queens desired to all above prices of bees and nuclei. Delivery guaranteed. No disease.
Spencer Apiaries Co., Nordhoff, Calif.

For Sale.—After June 1. good 3-banded Italian queens in small lots. Untested. one. 60c; 12, $7.00. Tested. one, 90c; 12, $10 50.
Leon Morris. Elizabethtown. Ind.

For Sale—Fine honey gathering strain of Italian bees in pound packages. One lb., $1 50; 10 lbs. $12.50; 100 lbs., $100. Special prices on larger quantities Small shipments by return mail.
Leib & Miller,
R. F. D. 7, San Jose, Calif.

Italian Breeding Queens will be ready to send out May 1. Prices, $2.50, $5.00 and $10. Queens of this year's rearing not ready before the middle of June.
Doolittle & Clark, Marietta, N. Y.

Italian Queens, also the Golden Beauties and Carniolans Tested, $1.00. Untested. 75c each. For bees by the pound and queens in lots write for prices.
Page Bankston,
Buffalo, Tex.

Queens ready in May. J. E Hand strain of 3 banded Italians, extra good workers and very gentle. Prices, select untested, $1.00 each; 6 for $5.00. Select tested, $1.75 each; 6 for $9 00. Breeders, $5 00 each.
J. M. Gingerich, Kalona, Iowa.
(Formerly Arthur, Ill)

Three-Banded Italian Queens ready April 1, of an exceptionally vigorous and long-lived strain of bees They are gentle, prolific, and good honey gatherers. Untested, $1.00; 3, $2 50; 6, $4.50; 12, $8 00. Tested, $1.25; 6, $6.50; 12, $12.
Jno. G. Miller,
723 So Carrizo St. Corpus Christi, Tex.

Notice—R. A. Shults will sell Italian queens in the season of 1915. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00 Breeders, $5.00. Bred from Moore and Doolittle stock.
R. A. Shults.
R. F. D. 3, Cosby, Tenn.

From Southern New Mexico—My yards will be able to furnish you bees by the pound at an early date. No disease. Satisfaction must be yours. Write at once. I can surprise you on prices. Established in 1914.
S. Mason, Hatch, New Mexico.

During spring and summer months we requeen all our two thousand colonies to prevent swarming. The queens removed from those hives are only one year old and of best Italian stock. We offer these queens at 50c each; $5.40 per dozen. Satisfaction guaranteed or money back. No disease.
Spencer Apiaries Co., Nordhoff, Calif.

For Sale—Queens, three-band Italians. Extra good strain. Their bees are great hustlers. Only drones from selected queens near mating yard. Untested, one, $1.00; 6 for $4.50; 12, $8.00. Ready June 15. When ordering, state time within which queens are wanted They will be mailed promptly or money returned.
D. G. Little,
Hartley, Iowa.

500 Sample Queens at 40c on first 500 orders. Moore's Strain Leather Colored Italians. Write for particulars and prices in quantity. April and May orders booked now on 10 percent deposit. Orders filled promptly or notice given when such deliveries can be made. Regular prices: Untested queen, 75c; six, $4.25; twelve, $8.00. Timberline Riggs, breeder.
Ogden Bee & Honey Co., Ogden, Utah.

Gray Caucasians—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application.
J. J. Wilder,
Cordele, Ga.

Happy!—If you wish to be happy just send me an order for some of my beautiful queens. Untested, $1.00 each; $4.25 for six; $8.00 a dozen. Tested, $1.50 each. Full 8-fr. colonies, single stories with untest. queens, $5.00; pounds of bees in light combless shipping cases, $1.25 without queens. Any queens you may desire with these can be sent with bees at prices above. Discounts on large orders. Safe arrival and good satisfaction to all customers. Only best three band and golden Italians. J. B. Atchley, Patton, Calif.

Bees for Sale—Full colonies eight (Hoffman) frames, Root hive, good honey-gathering stock, $5.00. Can be shipped about May 15 Nuclei on 2 frames, queen included, $2 50, or 3 frame, $3.25. Nuclei ready June 1; none before
Geo W. Barnes,
20 Kensington Place, Marion, Ohio

Have You Heard of the famous Atchley queens? If not, you will surely be pleased not only to hear of, but to use these queens. James Whitecotton, of Laguna Uvalde Co., Tex., says: "I am glad you have gone back to rearing queens again. I have been buying Atchley queens for 25 years, and the best queens I ever bought came from you." Only the best three band and goldens. Untested, $1.00; $4.25 for six; $8.00 a dozen Tested, $1.50 each. Bees by the pound and full colonies on application. I can handle any sized order. Safe arrival with satisfaction and promptness my motto.
A. T. Atchley,
Highland, Calif.

"A Guide Post"—A guide post that directs to a big honey crop is good queens. We have them, untested goldens or three-band Italians, $1 00 each; $4.25 for six; $8 00 per dozen. Lots of 100 or more, 60 cts each. Tested queens, $1.50 each. Best breeders, $5.00 each; full 8-frame single story colonies, $5.00 each. Safe arrival and good satisfaction. Best new crop orange blossom extracted honey; fine indeed. Write for prices.
Rialto Honey Co., Box 73, Rialto, Calif.

Moore's Strain and Golden Italian queens. Untested, one, $1.00; 6, $5.00; 12, $9.00; 50, $35. Carniolan, Banat and Caucasian queens. Untested, one, $1.25; 6, $6 00; 12, $10. Tested, any kind, one, $1 50, 6, $8 00 Choice breeding queens of any kind, $5.00 each, Nuclei, 2-frame, $2.50; 3-frame, $3.25; 10 frame, full colony, $5.00. Bees by the pound, $1.25. Add price of queens desired to all above nuclei and bees. Comb foundation. Circular free. Genuine orange blossom and mountain sage honey, one gallon can, $1.20; five gallon can, $5 50; case, two five gallon cans, $10. Samples, 10c each. Everything securely packed or crated and delivered at Orange depot. Safe arrival and satisfaction on everything we ship guaranteed
W. H. Rails, Orange, Calif.

HONEY AND BEESWAX

For Sale—Fancy orange-blossom honey. Send for price list.
James McKee,
Riverside, Calif.

Wanted—Comb, extracted honey, and beeswax.
R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale—Fine quality Raspberry-milkweed honey in new 60-lb cans (2 in case). Write for price.
P. W. Sowinski,
Bellaire, Mich.

For Sale—Spanish-needle, hearts-ease No. 1 light comb, $3.00 per case; fancy, $3.25 Mixed fall comb, $2.50 to $2 75 a case; 24 Danz. sections to case. Extracted, 120-lb cases 9c per pound.
W. A. Latshaw Co.,
Carlisle, Ind.

SUPPLIES.

Bee Supplies, all kinds, low prices. Catalog free.
J. W. Rouse, Mexico, Mo.

For Sale—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

Brother Beekeepers, send for my new prices on Supplies. I can save you money. Beeswax wanted.
W. D. Soper,
Jackson, Mich.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap.
White Mfg. Co.,
4Atf Greenville, Tex.

For Sale—I am selling foundation and paying the freight to your station anywhere in La. Root's goods for sale. Send me your orders. Am paying 28c cash for wax or 30c in trade delivered here.
J. F. Archdekin, Big Bend, La.

Standard Dovetailed Hives shipped direct from factory in Iowa. Fine 8 frame for $6.00. Hoffman frames, $2 75 per hundred. Plain sections, $4.20 per M. Write for prices on what you need—a full line.
The Stover Apiaries, Mayhew, Miss.

Lewis Beeware—Root's extractors, smokers, etc. Dadant's Comb Foundation. Large stock always on hand for prompt shipment. Western beekeepers can save money by patronizing the oldest co-operative association of beekeepers. Illustrated catalog free.
The Colorado Honey Producers' Ass'n.
Denver, Colo.

California redwood bee-hives, one story with top and bottom. 85c each; supers 25c each; frames, 1½c each. Discounts 100 or more, 10 percent. Extracted honey cases, 65c each. Medium brood foundation delivered by prepaid freight anywhere in the U. S. 25 lbs., 60c; 50 lbs., 56c; 100 lbs., 52c. Other grades in proportion. Highest prices paid for wax Special discount on our supplies. Catalog free.
Spencer Apiaries Co.,
Nordhoff, Calif.

POULTRY

For Sale—Wild Mallard Duck—12 eggs, $3.00
Ashmead, Williamson, N. Y.

Partridge Rock Eggs for hatching, $3.00 per 15. Neville Poultry Farm Kewanee, Ill.

FOR SALE

Pangburn wants you to write for illustrated circular describing his new foundation fastener, the fastest, easiest handled machine on the market. Invented and mfg. by W. S. Pangburn, Center Junction, Iowa.

For Sale—Honey cases (used) containing two 60-pound cans in good condition in quantities of one hundred, 20 cents per case. Smaller quantities 25 cents. Send us your orders.
G. A. Reuter,
411 Rush St., Chicago, Ill.

For Sale or Exchange for honey or beesuplies, 1912 8 H. P. American twin cylinder motor cycle. Cost $240. What's your offer?
Emil E. Nelson, Route 2, Renville, Minn.

MISCELLANEOUS

Learn Jiu Jitsu by mail.
F. McCann,
La Gloria, Cuba.

I am rewriting, revising and enlarging the "Pearce Method of Beekeeping." It was my intention to have it out by the first of March, but owing to a spell of sickness it was delayed, but will be out on or before the first of May. Order then. The price, 50c, will be the same as the first edition. Address.
J. A. Pearce,
Rural 1, Grand Rapids, Mich.

Are You looking for exceptional bargain? If so, investigate this bee and poultry business, located in one of Idaho's best valleys where failure was never known. $2000 will buy. You should produce $1350 with next five months; will guarantee $1090 crop. Owner has another proposition he wishes to accept, but in order to do so must sell quick. Reason for such a bargain; will give some terms. Address, "Idaho," care American Bee Journal, Hamilton, Ill.

How many people are there who really know what good Queen Bees are? We suspect that thousands of beekeepers know, so we claim to know, and can sell good queens to all who wish them. The well known three-bands and Goldens. Untested, $1.00 each; $4.25 for six; $8 00 per dozen. Tested, $1 50 each. Full eight-frame hives with untested queens, $5.00 each. Bees in pound packages, $1 25 f. o. b Riverside. Promptness and honest treatment, and of course satisfaction and safe arrival. Do not return dead queens to us; just state it on a postal, and we will return one at once.
Golden Rule Bee Co., Riverside, Calif.

MAIL
U.S.A.
Mr. B. MAN
BEEVILLE

"NUTMEG QUEENS"
BY RETURN MAIL

Leathered-colored Italians. Hardy, northern reared. Up-to-date methods. Until June 1, tested, $2.00. After $1.50. Untested, $1.00; 12 for $10. Large orders a specialty.

A. W. YATES 3 Chapman St. HARTFORD, CONN.

WANTED

WANTED—Bees in lots of 25 to 300 colonies; any style hive. Within 250 miles of Detroit.
A. W. Smith, Birmingham, Mich.

WANTED—500 standard frames of drawn comb. State price wanted in first letter.
P. A. Spellman, Armstrong Creek, Wis.

SITUATIONS.

WANTED.—Position by a young man for 1915 with a good beekeeper, anywhere. Have some experience. Warren R. Ionson.
R. R. No. 4, Jarvis P. O., Ontario, Canada.

REFINED young man of good habits wants situation with large beekeeper, Iowa or Illinois preferred. Wages including board and lodging. Answer at once.
Eugene Kuntzman, Logan, Iowa.

Statement of Ownership, Management Circulation, Etc.,

of the American Bee Journal, published monthly at Hamilton, Illinois.
Editor—C. P. Dadant.
Managing Editor—M. G. Dadant.
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Known bondholders, mortgagees, and other security holders holding one percent or more of total amount of bonds, mortgages or securities—None.
[Signed] M. G. DADANT, *Manager*.
Sworn to and subscribed before me this 30th day of March, 1915.
[SEAL.] H. M. CUERDEN.
Notary Public.
My Commission expires Aug. 25, 1917.

YOUR ORDERS

For tested Queens will be filled by return mail. Three-banded Italians only, bred to a high standard of excellence. Never a case of foulbrood in our apiary, which was established in 1886. Tested Queens, $1.00. Untested, $1.00; per doz. $9.00. Satisfaction guaranteed,
J. W. K. SHAW & CO., Loreauville, La.

Miller's Strain Italian Queens

By RETURN mail after June 5th to 10th, or money refunded. Bred from best RED CLOVER strains in the U. S. In full colonies from my SUPERIOR BREEDERS; northern bred for business; long tongued, three banded, gentle, winter well, hustlers, not inclined to swarm; roll honey in. One untested, $1.00; 6, $5.00; 12, $9.00. One select untested, $1.25; 6, $6.00; 12, $11.00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.
I. F. MILLER, Brookville, Pennsylvania

SELL YOUR QUEENS IN CANADA

IN the Province of Ontario alone there are 11,000 persons producing honey. A very conservative calculation means that there are 50,000 Queens. If you have Queens to sell to Canadian bee men, say so in The Canadian Horticulturist and Beekeeper, the only bee publication in Canada. It is the official organ of the Ontario and New Brunswick Beekeepers' Associations.
Classified rate 3 cents per word—each single number and sign counting as one word. Cash in advance.
Specimen copy on request.
The Canadian Horticulturist and Beekeeper
Peterboro, Canada

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TEXAS QUEENS

Italians, the pure three-banded stock from imported mothers. Carniolans, the pure dark grey stock from Carniola. Queens will be ready to ship early in March. No disease. Prices, 75 cents each. $8.00 per dozen.
Circular free
Grant Anderson, San Benito, Tex.

Porto-Panama Hats
COOL AS A DROP OF DEW
Hand-woven, soft, durable, comfortable. Good as the South American Panama but cooler, lighter, more dressy. Direct from maker to you $1.50 postpaid. State size and send money order. Money refunded if you are not perfectly satisfied. Very stylish for Ladies this year.
MARTIN LOPEZ & CO.
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BARNES' Foot-Power Machinery

Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it."
Catalog & price-list free
W. F. & JOHN BARNES
205 Ruby St., ROCKFORD, ILLINOIS.

Get the Atchley Queens

It took 30 years to produce the good qualities obtained in this strain of three banded bees. If you haven't some of this stock in your apiary now, you will have, some day.
Untested, $1.00 each, or $10.00 a dozen. After April 15, 75c each, or $8.00 a dozen. Good tested ones $1.50 each. I can sell you bees or nuclei cheap; write for prices. Satisfaction of all bees and queens guaranteed.
Wm. Atchley, Mathis, San Patricio Co., Texas.

CARNIOLANS ONLY

Carniolans build up fast in the spring, are very prolific, VERY GENTLE, cap honey very white, enter comb-honey supers readily, gather almost no propolis, and gather almost no propolis, and are the BEST of honey gatherers.

Untested queens,	$1.00 each;	dozen,	$ 9.00
Tested	" 1.50	"	12.00
1-pound package with queen			2.50

Delivery after May 15, depending upon season somewhat.
ALBERT G. HANN, Clinton, New Jersey

CHARLES MONDENG
BEE KEEPERS' SUPPLIES

MILLIONS OF

Fine Sections

Thousands of Hives, the best ever made of white pine lumber, ready for prompt shipment. Don't miss them. My goods are guaranteed. A trial order will prove it. 200 colonies of Adels and Carniolans. If you want a square deal, send for my Catalog and Price List. I will pay highest market price for Beeswax in trade.

CHARLES MONDENG
146 Newton Ave. North
Minneapolis, Minnesota

The Beekeepers' Review

The Review is now owned and published by the beekeepers themselves; in fact, it is the honey producers' own magazine, wholly devoted to their especial needs. We buy supplies for our subscribers, and help them to sell their honey without cost, there being a department where names of those having honey for sale are listed free of charge. Also, if you have bees for sale, there is a department where we list you without a cent's cost. If you want to buy honey, there is a department where you can be listed without charge. Other departments contemplative. If you have beeswax you want made into foundation, we save you money nn that. The fact is, the Review's main object of existence is to help its subscribers. As we own it ourselves, why shouldn't it be?

We are just making a special offer to new subscribers, in as much as we are giving away the last eight months of 1914 to all new subscribers for 1915. Those back numbers contain many valuable contributions not found in any other publication. Just listen to a few, not having space here to mention them all: Beginning with the May number Mr. Adrian Getaz gives his experience on preventing swarming; size of entrance to use; home rearing of queens; short cuts in finding queens and other subjects. You should read this. Then there is a two-page article by Wilder, describing his management of 3000 colonies in 50 yards. The fact is, there are nine articles from Mr. Wilder in those back numbers and more to follow. Those articles are not published in any other magazine. You should read them. Then there are several articles from Pearce, telling of his system of managing bees in the production of comb honey without swarming, with only two visits a year. Would you like to know how it is done? Then there are field notes from Michigan, Tennessee, Iowa, Colorado, telling of things done under different conditions. Those will interest you. Then there is the Secretary's corner; there the National Secretary tells his experience, and "boosts honey." These are just a few of the good things you will receive for your dollar by subscribing for The Review. Besides all this, you will get ALL the fine articles written for the National convention at St. Louis in 1914, and during this year all the papers read at the Denver meeting this month will be published in The Review, and nowhere else. The Review is mighty fortunate in having so much available material in sight. You cannot know too much about your business, and these 20 numbers we are offering you for a dollar will help you wonderfully in your future beekeeping. Address your own paper.

The Beekeepers' Review, Northstar, Mich.

QUICK GERMINATION

SWEET CLOVER SEED

Get our **Specially Treated Hulled Seed** which will germinate 90 percent to 98 percent. A new process. Also causes seed to sprout quickly. Insures a better stand with less seed per acre than ordinarily used. Samples on application.

	1 lb.	10 lbs.	25 lbs.	100 lbs.
White Sweet Clover (unhulled, hand screened)	20c	$1.80	$4 00	$15 00
" " " unhulled, recleaned)	25c	2.25	5.00	18 00
" " " hulled, recleaned)	35c	3.00	6.75	25.00
Yellow " " (hulled, recleaned M. officinalis	25c	2.30	5.50	20,00
Alsike Clover Seed (hulled	25c	2.00	4.50	17 00

SPECIAL PRICES ON LARGE QUANTITIES

The recleaned seed is machine cleaned, and is free from chaff, dirt, and light seed. All seed f. o. b. Hamilton, or Keokuk, Iowa at the above prices. No charge for bags.

DADANT & SONS, HAMILTON, ILLINOIS

YELLOW SWEET CLOVER—Many people fail to recognize the value of Yellow Sweet Clover as a honey plant. The fact that it blooms two weeks earlier than the White variety makes it especially valuable to the beekeeper. Be sure however, to get the *Melilotus officinalis* as quoted above.

Queens and Bees

Our queens and bees are from the best imported Italian stock. Unexcelled for gentleness and honey. Ready April 1.

One untested queen, 75c; 6, $4.25; 12, $8.00. ½ lb. of bees, 90c; 1 lb., $1.25. If a queen is wanted with the bees, add the price. Safe arrival and satisfaction guaranteed.

N. FOREHAND & CO.,
Ft. Deposit, Ala.

FARM SEEDS

Alsike Clover seed, small red, mammoth. Timothy, Alfalfa, White and Yellow Sweet clover and blue grass, millet, rape, etc. Also thoroughbred seed corn. Catalog apiary supplies *free*. Write for prices on seeds and samples.

F. A. SNELL,
Milledgeville, Carroll Co., Illinois

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

Leather Colored Italians

About April 1st. I will again be ready to mail untested queens of my fine strain of Italians; I breed no other race. I also have choice tested and breeding queens at all times. Get your orders booked early.

I rear only the kind of queens that are sought for and demanded by successful beekeepers. Get your orders booked early. Cash with order. Satisfaction guaranteed. Untested queens, $1.00 each; $9.00 per doz.; $75 per 100. Choice tested, $1.50 each; $15 per doz. Breeders, $3.00 to $5.00 each.

C. S. ENGLE
Beeville, Bee Co., Texas

Weber Service!

At this time of the year it is especially important that the Beekeeper be able to secure his supplies without delay. With the promise of an early spring and a heavy honey-flow this is doubly important.

Root's Goods and Weber Service

IS A COMBINATION THAT IS HARD TO BEAT

We have a reputation for prompt delivery and quick service. Being located in Cincinnati, the gateway of the South, we can save you considerable in transportation charges.

Our 1915 catalog will be promptly mailed to any one interested.

C. H. W. WEBER & CO.,

2146 Central Avenue, Cincinnati, Ohio

MEASURING BEES

The ordinary human being would consider it the height of folly to waste his time measuring so tiny an object as a bee, yet that is precisely what had to be done in order to be able to manufacture honey-boards that would exclude the queens and drones and allow the workers to pass. One of the most ingenious of the many machines used for the manufacture of bee supplies is the one shown in the accompanying illustration, which perforates the zinc sheets so as to leave openings of exactly 163-1000 of an inch wide. If you have ever tried to measure fractions of an inch you will readily understand that such a machine must, of necessity, be absolutely accurate and exact.

Machine for Perforating Zinc

Root's queen-excluding honey-boards are guaranteed to exclude all but the very young virgin queens. They may be obtained from any one of the many dealers handling Root's goods.

Root's Goods have a universal reputation.

THE A. I. ROOT COMPANY, Executive Offices and Factory, **MEDINA, OHIO**

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Syracuse, 1631 West Genesee St.
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MARSHFIELD GOODS

BEE KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. The **CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

EARLY ORDER DISCOUNTS WILL
Pay You to Buy Bee Supplies Now

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

LEAHY MFG. CO., 90 Sixth St., Higginsville, Missouri

START THE SEASON RIGHT

By using **Dittmer Foundation** the bees like it for it's made to just suit them, and is just like the Natural Comb they make themselves.

Send for prices on having your Beeswax made into Comb Foundation, which includes all freight charges being paid.

All other Supplies in stock

Gus Dittmer Company, Augusta, Wisconsin

ARCHDEKIN'S FINE ITALIAN QUEENS—3-BANDED

I have moved South to secure more favorable conditions and increased facilities for producing my well known queens and bees, and will do my best to keep up with orders. Cells are built in strong two-story colonies, securing big well-fed cells and mated to select drones. Every queen guaranteed first class. Safe arrival and satisfaction No disease Ready April 15. Nuclei May 15. Order now for early delivery. Untested, $1,00 each; 6 for $5.50; doz., $10; 1-lb bees, no queen, $1 50; with queen, $2 00; 2-fr. nuclei with untested queen, $3.50; 2 for $6 50; 5 for $15. Nuclei on Hoffman frames, wired from full sheets. First-class. Prompt attention to orders. Root's goods for sale.

J. F. ARCHDEKIN, Big Bend, La.

THE TRUTH ABOUT FLORIDA

To learn the truth about a country you want to read the agricultural paper which the growers of that country read, and THE FLORIDA GROWER, published at Tampa, Florida, is Florida's one agricultural weekly. It is unique in the agricultural field. It carries more advertising than any agricultural paper in the country; it has a more interested body of readers; it is instructive and entertaining. Sample copy free or 50 cents for a four months' trial subscription 50 cents back if not satisfied.

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Box A-B, Tampa, Florida

FREEMAN'S FARMER North Yakima, Wash.

Successor to Northwest Farm and Home
69 YEARS OLD

If you want a descriptive and agricultural magazine, it will inform you all about the methods in the Pacific Northwest.
Send One dollar and have the magazine sent for one year. Cut rate of one-half price now on

Beekeepers' Supplies

Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description Shipping-cases, Section-holders, Comb-foundation, Smokers, etc.
Get my prices before placing your orders.

R. H. SCHMIDT
Rt. 3, Box 209, Sheboygan, Wis.

OUR VERY BEST IS THE VERY BEST

BEE SUPPLIES

Best Sections, Best Shipping Cases
Best of all Supplies

Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready now. Send your name and get one.
H. S DUBY & SON, St. Anne, Ill., carry a full line of our goods.

AUG. LOTZ CO. BOYD, WIS.

The Bee-Supply Season is Here—We are Ready for Your Bee-Supply Orders

DON'T FORGET
HERE IS THE
ONLY PLACE
YOU CAN GET

MUTH

SERVICE
QUALITY
SPECIAL HIVE

THE NEW MUTH 1915 CATALOG
Send for it—Watch for it—Wait for it

It is now out. If you have not received your copy, send for same at once. It is free for the asking. Everything you need is there—HIVES—BROOD FRAMES—FOUNDATION—SECTIONS—SMOKERS—BEE-VEILS—BRUSHES, Etc., Etc.

The Fred W. Muth Company

"The Busy Bee Men"

204 Walnut Street, - CINCINNATI, OHIO

P. S.—Ship us your old combs and cappings, and let us render them for you. Our process extracts the last drop of wax from the slumgum. This means money for you. Write for full particulars.

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DADANT'S FOUNDATION

Rendering Combs

Cappings or slumgum is a "mussy" job at best. We are equipped for this work, and will render yours for you on shares. Send for our terms. For your share of the wax we will either pay you cash, ship you goods in exchange or manufacture it into

Dadant's Foundation

Known and liked the world over because it is just like the combs the bees make themselves.

Bee Supplies

We carry a large stock of all kinds of bee supplies. Drop us a card, making known your wants. We guarantee satisfaction in every way.

DADANT & SONS,
HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

JUNE 1915

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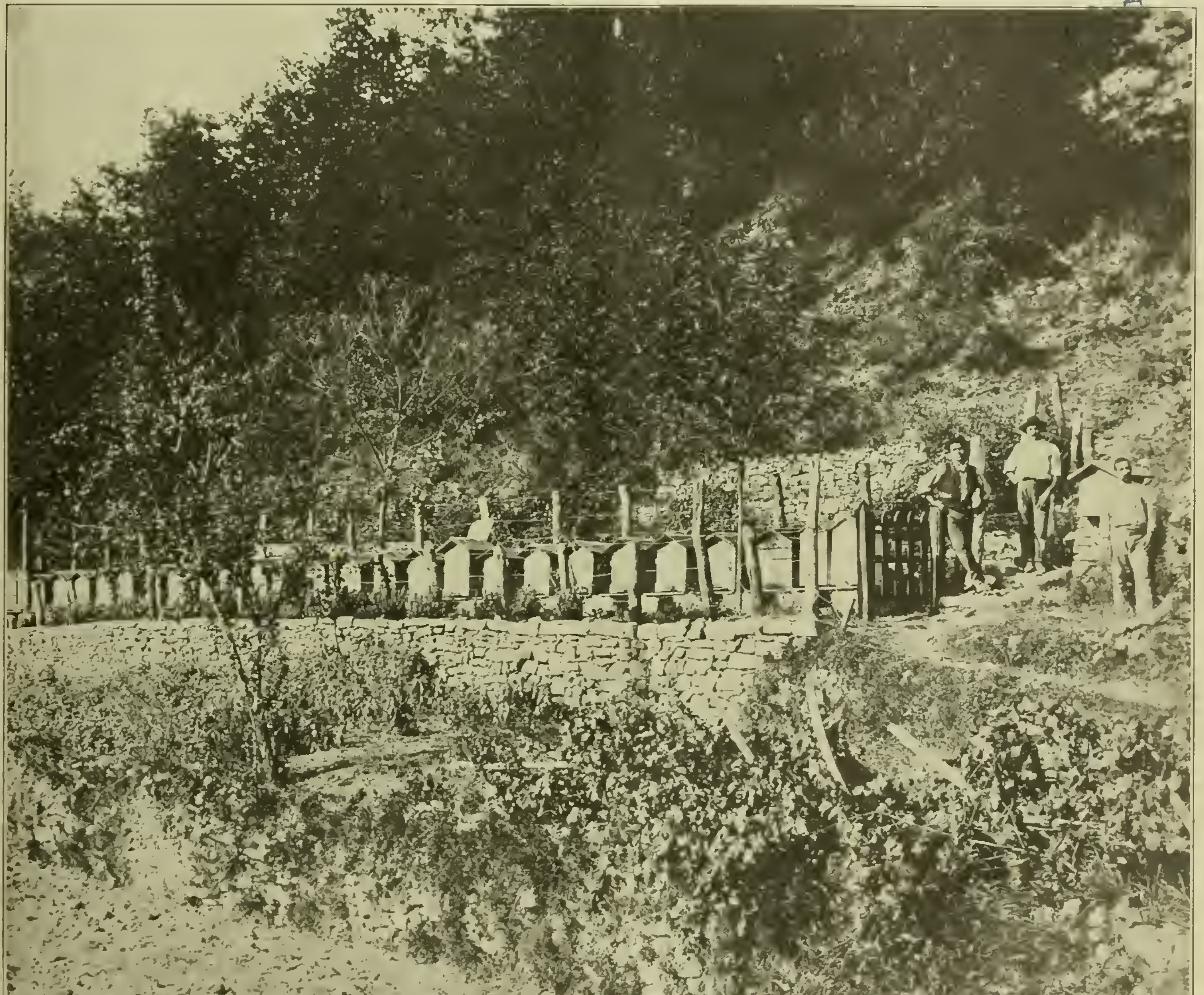

In the Apennines

Apiary of Engineer Capponi, of San Remo, mentioned in the May number.

AMERICAN BEE JOURNAL

ESTABLISHED IN 1861

OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY

American Bee Journal

1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

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THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec15" on your label shows that it is paid to the end of December, 1915.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

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Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1895. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

☞ **Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD**

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.

STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n

ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

Bee-Supplies

LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C. C. CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

"Griggs Saves You Freight" **TOLEDO** "Griggs Saves You Freight"

Now for 1915 Supplies

We want every beekeeper to have our FREE illustrated catalog of everything used by beemen, also our special price-list of

POULTRY FEEDS

If **quality, prices** and **service** count with you, together with saving in **freight.** Don't order your supplies until you have it.

We use large quantities of Beeswax and Honey.

Do You Wish Pure Maple Syrup?

We have it and the best made, too, $1.50 per gallon.

S. J. GRIGGS & CO. Dept. A, Toledo, Ohio

Griggs is on the job.

INCREASE THE YIELD OF YOUR FARM

The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

Everybody knows that by following the Campbell System of Soil Culture, crop yields have been doubled in every State of the Union from New York to California. Why not learn what the principles of the Campbell System are and adopt them ? You can get all this and a thorough agricultural education without leaving home by taking a course in the

Campbell Correspondence School of Soil Culture

You can have your choice of eight courses, Soil Tillage, Soil Improvement, Small Farming, Horticulture, Irrigation, Dry Farming, Farm Engineering and Animal Husbandry, all for a nominal tuition fee, no board to pay, no books to buy, everything furnished, and you can use your spare time while still running your farm or holding your job.

We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad, but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

Campbell Scientific Soil Culture Company Billings, Montana

THREE-BANDED ITALIANS—GET THE BEST

Twenty years of breeding and selection has resulted in an exceptionally vigorous and long-lived strain of bees, unexcelled for gentleness, prolificness and honey-gathering qualities. No disease.

	Before May 1st			After May 1st		
	1	6	12	1	6	12
Untested.	$1.25	$ 6.50	$11.50	$ .75	$4.00	$ 7.50
Tested..	1.50	8.00	15.00	1.25	6.50	12.00
Select tested	2.00	10.00	18.00	1.50	8.00	15.00
1-lb. pkg. bees	2.00	11.00	21.00	1.50	9.00	18.00

Breeders, $5.00 each, any time.

Safe arrival and satisfaction guaranteed on all queens to all points in United States and Canada. Queens for export are carefully packed in export cages; but safe arrival is not guaranteed. Bees by the pound guaranteed within six days of Mathis, Tex. If queen is wanted with bees by the pound, add price of queen wanted to price of bees. Better let me book your orders now.

H. D. MURRY, MATHIS, TEXAS

Beekeepers' Supplies

Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

J. NEBEL & SON SUPPLY CO.,
High hill, Montg. Co., Mo.

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies

FROFALCON QUEENS

Everything for the beekeeper. Address.

J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

Wanted

Choice Grades of EXTRACTED HONEY

Send Sample and State Quantity

How packed and the lowest price you will take

We are always in the market for **Beeswax,** and pay highest market prices.

Hildreth & Segelken
265-267 Greenwich St., New York, N. Y

TRY MY FAMOUS QUEENS

From Improved Stock

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, 1, $1.00; 6, $5.00; 12, $9.00; 25, $17.50; 50, $34; 100, $65 Tested, 1, $1 50; 6, $8 00; 12, $15.00. Breeders of either strain, $5 00. Nuclei with untested queen, 1-frame, $2 50; six 1-frame, $15 00; 2 frame, $3 50; six 2-frame, $20.40; nuclei with tested queen, 1-frame, $3.00; six 1-frame, $17.40; 2 frame, $4.00; six 2-frame, $23.40 Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

BUCKEYE CHAFF HIVES
DOVETAILED HIVES

Sections, Comb Foundation

Choice Northern-Bred Italian Queens

Bees by the pound

General Agents for Root's Goods in Michigan

SEND FOR 1915 CATALOG

M. H. HUNT & SON
Lansing, Mich.

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate; purest of the pure.

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity;** no guess, but positive results, The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
609 W. 17th Ave., Houston Heights, Texas

SECTIONS "GOOD ENOUGH" BRAND

By eliminating the expense of grading and inspection, we are enabled to put on the market this special brand of Mill Run Sections at low prices in addition to our regular Lewis Brand stock.. They are made by the best machinery, and undergo the same process of manufacture, such as sanding, polishing, etc., as the highest priced sections on the market, but no attempt is made at grading, and they include both the first and second grades. Sold only by the crate of 500 We have them only in the following sizes this season: 4¼x4¼x1⅞ beeway, 4¼x4¼x1½, and 4x5x1⅜ plain. The stock on hand is fine and it will please you. Write us for prices on large quantities. Many orders for these sections are arriving some as high as 25,000, and all are pleased. A trial order will convince you they are **good enough.**

500 in crate	$2 50	5000 to 9500, per M	$4 25
1000 to 4500, per M	4.50	10,000 or more	4.00

A. G. WOODMAN CO., Grand Rapids, Mich.

QUEENS—Golden and Leather-colored

We are in position to fill your orders for queens and bees from date of this "Journal" until October 1, 1915, at following prices:

Prices of one and over	1	6	12
Virgins	$ .50	$2 75	$ 5 00
Untested	.85	4.50	8 00
Select untested	1.00	5 00	9 00
Warranted	1 10	5.50	9 50
Tested	1 50	7 50	13.50
Select tested	1.75	9.00	15 00
Tested breeding	3.00		
Select tested breeding	5.00		
Ex. select test. breeding	7.50		

1 frame nuclei without queen	$1.50
2 frame nuclei without queen	2 75
3 frame nuclei without queen	3.50
Colony 8-frame hive without queen	7.50
Colony 10-frame Danz, without queen	9.50
Colony 10-frame hive without queen	9 50

When queens are wanted with nuclei and colonies, add queens at prices as above for queens.

Bees by Pound F. O. B. Penn., Miss.

½-pound package, wire cage	$1.00
1-pound package, wire cage	1 50
2-pound package, wire cage	2 00

No queen supplied at these prices. Make selection and add to above prices.

All bees and queens shipped from our yards at Penn, Miss. We have no disease, nor do we know of any diseased bees in this State. Our queens are bred from highly selected stock of uniformly marked bees; for gentleness and working qualities they are unsurpassed; they are world-beaters as honey-gatherers. We consider these queens the equal of any on the market, and years of favorable reports substantiate this claim. In ordering you have the choice of selecting three-banders or goldens Prompt attention given to all orders and inquiries. Read The A. I. Root Company's endorsement below.

MEDINA, OHIO, February 6, 1914.

THE PENN CO., Penn, Miss.

Gentlemen:—Replying to yours of February 3, we would state that we have bought a large number of queens of you. We have found them uniformly marked, and of a good stock; in fact, they are first-class in every respect. Another thing, we have always found that you make prompt deliveries, or give us notice promptly when such deliveries could not be made.

THE A. I. ROOT COMPANY,
Per E. R. Root, Vice-president.

Our record last year, about 10,000 queens, and shipments to all important foreign countries; every State in United States and Canada, and only two complaints, which we readily made good Try us. We are sure to please you.
Our QUEENS all around the world. The sun never sets on a Penn Co.'s queen.

THE PENN COMPANY, Penn, Lowndes County, Mississippi

Representatives of The A. I. Root Company, and Queen Specialists.

PORTER BEE ESCAPE

PORTER
BEE ESCAPE
PATENTED

SAVES HONEY TIME MONEY

For sale by all dealers.
If no dealer, write factory

R & E. C. PORTER, MFRS.
Lewistown, Ill., U. S. A.

3-BAND ITALIAN QUEENS

FOR SALE AFTER MAY 1

This stock of bees does get the honey when there is any to get. One untested, 75c; 6, $4.00; 12, $7.00; 25, $12.00; 50, $46. One lb. of bees with queen, $3.00; 2 lbs. with queen, $5.00. All queens are mated and laying before sending out. No tested queens for sale. The above prices must be doubled when sending queens to foreign lands. If queen arrives dead, send it back and get another or the money. No checks accepted in any case. (My former address was Cato, Ark.)

Address, J. B. ALEXANDER
R. R. No. 1, Jacksonville, Ark.

CAUCASIANS and CARNIOLANS

First importer of these races from their native lands; 31 years' experience with Carniolans, 12 with Caucasians; resided and traveled in Carniola, Austria four years, giving my whole time to queen rearing; spent several months in bee explorations in the Caucasus, Russia. Untested queens, $1 00; five for $4 00. Tested, $2.00 each; all from select mothers imported direct from apiaries personally inspected by myself. Japan, Australasia, and South America add one-half to above prices. Safe arrival guaranteed anywhere in the world.

FRANK BENTON
Cherrydale Station, Washington, D. C.

CARNIOLANS ONLY

Carniolans build up fast in the spring, are very prolific, VERY GENTLE, cap honey very white, enter comb-honey supers readily, and gather almost no propolis, and are the BEST of honey gatherers. Ten years' experience in honey producing and breeding these bees.

Untested queens,	$1.00 each;	dozen,	$ 9.00
Tested	" 1 50	" "	12.00
1-pound package with queen			2.50

Ask for our free paper, "Superiority of the Carniolan Bee."

ALBERT G. HANN, Clinton, New Jersey

QUALITY FIRST

"falcon" Queens speak for themselves

We'll let two of our many satisfied customers tell what they think of "falcon" Queens.

PERCH RIVER, N. Y., Oct. 5. 1914.

Gentlemen:—The queens received from you this season have been perfectly satisfactory. For cleaning up foulbrood they cannot be beat. We could not ask for any better queens, and I have not heard any fault found from parties I have sold to.

HUDSON SHAVER & SONS.

NEWFOUNDLAND, N. J., Oct 5. 1914.

Dear Sir:—I received the tested queen all right, and she is a fine layer and a large queen. also. I want to thank you for sending me such a nice one.

FRED HALL.

Prices of "Falcon" Queens—Three-banded Italians, Golden Italian and Carniolans

Before July 1	1	6	12	Before July 1	1	6	12
Untested	$1.10	$6.30	$12.00	Tested	$1.50	$ 8.00	$15.00
Select untested	1.25	6.75	12.75	Select tested	2.00	10.00	18.00

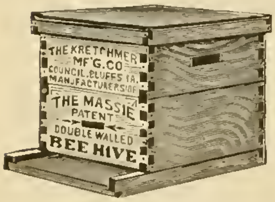
SAFE ARRIVAL AND SATISFACTION GUARANTEED **DEALERS EVERYWHERE**

RED CATALOG, Postpaid - **"Simplifed Beekeeping," Postpaid**

W. T. Falconer Mfg. Co., Falconer, New York

Where the good bee-hives come from

The Double-Walled Massie Bee-Hive


THE KRETCHMER MFG. CO. COUNCIL BLUFFS IA. MANUFACTURERS OF
THE MASSIE PATENT
DOUBLE WALLED BEE HIVE

THE MASSIE HIVE

For Comb or Extracted Honey

Surest Protection for Bees—Increased Supply of Honey—

The Best Hive for any Climate

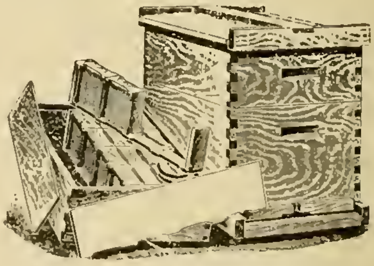
Furnished in the clearest of lumber in either Cypress, White Pine or Redwood

All Brood and Extracting Frames Made from White Pine

THE MASSIE VENTILATED BOTTOM

Admits fresh air into the hive, lessening the chance for swarming, and giving renewed energy to the bees.

Fifty years in the bee supply business has shown us that the **MASSIE** is **the very best hive,** and testimonials to this effect are received daily from those who are using this hive.



The Dovetailed Hive for Comb Honey

WHY NOT GIVE US A TRIAL ORDER? **SATISFACTION FULLY GUARANTEED**

We are also extensive manufacturers of **Dovetailed Hives** and **all other Apiarian Supplies.** If you are in the market for supplies be sure to get our prices before buying elsewhere. We will mail our large illustrated catalog and **special price list** to any one upon request.

KRETCHMER MFG. CO., COUNCIL BLUFFS, IOWA

CLOSING OUT SALE

—OF—

BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.35
Danzenbaker Bee-Smoker ($1.00)	.80

GEORGE W. YORK, SANDPOINT, IDAHO

ITALIAN QUEENS **NORTHERN BRED**

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents; "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, GLENWOOD, MICH

Get the Atchley Queens

It took 30 years to produce the good qualities obtained in this strain of three banded bees. If you haven't some of this stock in your apiary now, you will have, some day.

Untested, $1.00 each, or $10.00 a dozen. After April 15, 75c each, or $8.00 a dozen. Good tested ones $1.50 each. I can sell you bees or nuclei cheap; write for prices. Satisfaction of all bees and queens guaranteed.

Wm. Atchley, Mathis, San Patricio Co., Texas.

Get Blanke's BEE BOOK

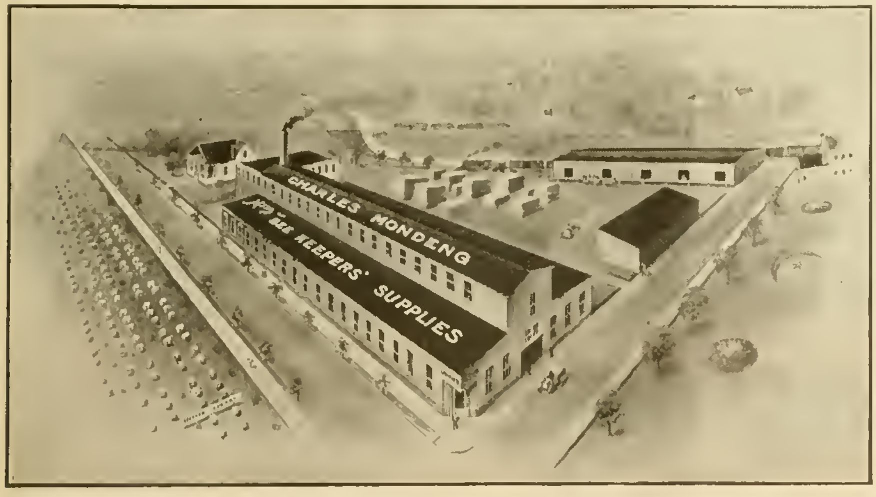
FREE!

Our new Bee Book of 68 pages—150 illustrations, is just off the press. Contains valuable information for beginners in bee culture, as well as for expert bee-keepers. We have everything for the apiary, including the bees. We ship same day order is received.

BLANKE MFG. & SUPPLY CO.,

209 Washington Ave., St. Louis, Mo.

Established 1899



MILLIONS OF

Fine Sections

Thousands of Hives, the best ever made of white pine lumber, ready for prompt shipment. Don't miss them. My goods are guaranteed. A trial order will prove it. 200 colonies of Adels and Carniolans. If you want a square deal, send for my Catalog and Price List. I will pay highest market price for Beeswax in trade.

CHARLES MONDENG
146 Newton Ave. North
Minneapolis, Minnesota

SUPPLIES AND BEES

If you need supplies or bees shipped promptly, write us. Our stock is complete. No delays. Chaff and single walled hives. Bees by the pound, nucleus or full colony. Untested queens, $1.00. Tested, $1.25. Catalog free.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

Queens and Bees

Our queens and bees are from the best imported Italian stock. Unexcelled for gentleness and honey. Ready April 1.

One untested queen, 75c; 6, $4.25; 12, $8.00. ½ lb. of bees, 90c; 1 lb., $1.25. If a queen is wanted with the bees, add the price. Safe arrival and satisfaction guaranteed.

N. FOREHAND & CO.,
Ft. Deposit, Ala.

Leather Colored Italians

About April 1st. I will again be ready to mail untested queens of my fine strain of Italians; I breed no other race. I also have choice tested and breeding queens at all times. Get your orders booked early.

I rear only the kind of queens that are sought for and demanded by successful bee-keepers. Get your orders booked early. Cash with order. Satisfaction guaranteed. Untested queens, $1.00 each; $9.00 per doz.; $75 per 100. Choice tested, $1.50 each; $15 per doz. Breeders, $3.00 to $5.00 each.

C. S. ENGLE
Beeville, Bee Co., Texas

NEW ENGLAND BEE KEEPERS
Everything in Supplies
New Goods. Factory Prices.
Save Freight and Express Charges
CULL & WILLIAMS CO.,
Providence, R. I.

FARM SEEDS

Alsike Clover seed, small red, mammoth, Timothy, Alfalfa, White and Yellow Sweet clover and blue grass, millet, rape, etc. Also thoroughbred seed corn. Catalog apiary supplies *free*. Write for prices on seeds and samples.

F. A. SNELL,
Milledgeville, Carroll Co., Illinois

We Have Decided

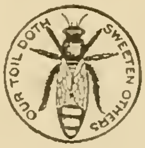
Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

Celluloid Queen-Buttons

These are very pretty things for bee-keepers or honey-sellers to wear on their coat-lapels. They often serve to introduce the subject of honey, which might frequently lead to a sale.

NOTE.—One bee-keeper writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of these buttons], as it will cause people to ask questions about the busy bee, and many a conversation thus started wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."



OUR TOIL DOTH SWEETEN OTHERS

The picture shown above is a reproduction of a motto queen-button that we offer to bee-keepers. It has a pin on the underside to fasten it.

PRICES—by mail—1 for 6 cts.; 2 for 10 cts.; or 6 for 25 cts

HONEY AND BEESWAX

CHICAGO, May 15.—Very little honey of any kind is selling at the present time. The market, however, is bare of comb honey, and while we cannot quote prices from sales, No 1 to fancy would bring 17@18c per pound. No producer should have any comb to carry to next month with the market in its present condition, for it would sell very soon after arrival.

Extracted is plentiful and slow of sale with the exception of white clover and basswood, which, like the comb honey, seems to be exhausted and commands 9c per pound, but other white grades can be bought at 7@8c per pound, while the ambers can be bought from 5@7c per pound, according to kind and quality. Beeswax is steady at from 30@32c per pound.

R. A. BURNETT & CO.

KANSAS CITY, MO., May 15.—There is no change in our honey market since our last quotation. The market is bare of comb honey, but the supply of extracted is large and the demand very light. We quote: No. 1 white comb honey, 24 section cases, $3.50 to $3.60; No. 2, $3.25 to $3.35. No. 1 amber, $3.25 to $3.40. No. 2, $2.75 to $3.00. Extracted, white, per pound, 7½@8c; amber, 5@7c. Beeswax, No. 1, 28c a pound; No. 2, 25c a pound.

C. C. CLEMONS PRODUCE COMPANY.

CINCINNATI, May 17.—Business is not good in the honey line, although the demand is looking up somewhat. We quote No. 1 comb honey at $3.75 to $4.00 per case, and extracted amber at 5½@7c, and white from 8@10c a pound. We are paying 28c a pound cash for beeswax or 30c a pound in trade.

THE FRED W. MUTH CO.

DENVER, May 17.—We have nothing to offer in comb honey, but have a good stock of first-class extracted honey, which we are offering at the following local jobbing prices: White, 8½@8¾c per pound, light amber 8@8¼c, and amber strained, 7@8c. We buy beeswax and pay 28c per pound in cash and 30c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

NEW YORK, May 18.—There is no change in the situation of the honey market from our last report. Trade is quiet on comb honey as well as extracted, and prices are ruling about the same as our last quotations.

HILDRETH & SEGELKEN.

LOS ANGELES, May 18.—The market on California honey at present is about as follows; Comb, white, $3.00 per case; light amber, $2.75. Stocks ample for present requirements. Extracted, light amber alfalfa, 3¾c per pound; light amber sage, 4¼c per pound; water-white sage, 7c; white orange, 7c (new crop). Beeswax, 28c. All f. o. b. Coast.

HAMILTON & MENDERSON.

YOU TAKE NO CHANCES

WHEN USING LEWIS BEEWARE

Lewis Hives and Sections and all other goods are made from the best materials and are scientifically manufactured

THIS IS THE ONE CONCLUSION ON WHICH ALL BEEKEEPERS CAN AGREE

OUR GUARANTEE

We absolutely guarantee our goods to be perfectly manufactured of the best material for the purpose. On examination, if our goods are not as represented, we do not ask you to keep them. Return same at our expense and we will refund your money, including any transportation charges you have paid. If you purchase our goods from one of our distributers, this same guarantee holds good, as we stand back of them.

G. B. Lewis Company Watertown, Wis., U.S.A.

Distributers of Lewis Beeware

The following purchase from us in car lots for distribution in their territory:

CALIFORNIA	W. A. Trickey	Bishop
COLORADO	Colorado Honey Producers' Association	Denver
COLORADO	Grand Junction Fruit Growers' Association	Grand Junction
COLORADO	Delta County Fruit Growers' Association	Delta
COLORADO	Producers' Association	De Beque
COLORADO	A. S. Parson	Rocky Ford
COLORADO	Coffin & Foster	Rifle
COLORADO	J. Roscoe Miller	Montrose
GEORGIA	J. J. Wilder	Cordele
IDAHO	City Grain & Poultry Co	Nampa
ILLINOIS	Dadant & Sons	Hamilton
IOWA	Louis Hanssen's Sons	Davenport
IOWA	Adam A. Clarke	Le Mars
IOWA	H. J. Pfiffner	Emmetsburg
MICHIGAN	A. G. Woodman Co	Grand Rapids
NEW MEXICO	C. F. Reynolds	Artesia
NEW MEXICO	H. H. Brown	La Plata
NEVADA	H. Trickey	Reno
OHIO	Fred W. Muth Co	Cincinnati
OREGON	Chas. H. Lilly Co	Portland
TENNESSEE	Otto Schwill & Co	Memphis
TEXAS	Southwestern Bee Company	San Antonio
UTAH	Foulger & Sons	Ogden
WASHINGTON	Chas. H. Lilly Co	Seattle
PORTO RICO	Fritze, Lundt & Co. S	Ponce
ENGLAND	H. H. Taylor	Welwyn

AMERICAN
BEE JOURNAL

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JUNE, 1915

Vol. LV.—No. 6

EDITORIAL COMMENTS

Sections by Parcel Post

A section of honey was received at Marengo, sent from Norwich, Conn., by Allen Latham. Concerning it the following note was received:

"I am sending under separate cover a section of honey. I am not sending it to cause you to acquire a liking for the sumac honey, but to illustrate by example a method of sending comb honey by mail. I have sent it many times the past winter, and have not had one instance of disaster. Four sections were sent to Chicago, and I particularly asked that its condition be noted. I was informed that it came in perfect condition, and would have gone on to San Francisco as well. I have several times sent as many as ten sections packed this way, but feel rather shaky with the heavier packages. Ten sections demand so much excelsior that the bundle approaches the limit in size. I am always careful to select a section fastened on at least three sides with cells next to the wood sealed. I should not advise trying to send sections which did not have sealed honey next the wood.

"The section I am sending you was produced without separators. I do not use separators on more than a small percentage of my section honey, and question whether I have any more unsalable sections than I used to have when I used separators almost entirely."

The package was mostly a bundle of excelsior, tighly wrapped. The section came in such excellent condition that it would seem that with the precautions taken by Mr. Latham there would be no difficulty as to such shipments. Of course, for such long distances it would hardly be feasible, for it was sent into the 5th zone, the package being not far from a foot each way and weighing nearly 2½ pounds, so that the postage was 20 cents, but for 7 cents the same package could be sent anywhere within 150 miles.

First a waxed paper enveloped the section. It was then put in a neat carton, enclosing it on all sides. Then a neat wrapping of paper as heavy as ordinary writing-paper. Then a light wooden box open at two ends, wrapped in paper, and about this the excelsior, over which was tied securely two coverings of thin, tough paper.

One would not be likely to suspect that the section was produced without separators, and to most of us the question will occur, "How does he do it?" The only thing unusual in appearance is the section open on four sides. Can that help to dispense with separators? A curious thing is that one looking at or through the section might pronounce it white clover, but would never make the mistake after cutting into it and seeing the distinctly yellow tint of the sumac honey. C. C. M.

Photograps for Publication

Within not a great many years illustrations by way of half tone pictures made from photographs have become a strong feature in magazines of all kinds, including bee journals. To the many beekeepers who "touch the button," the American Bee Journal is indebted for much that adds interest and beauty to its pages. Yet it sometimes happens that some one with little experience in this particular sends in a picture that is not available. When this happens it is likely to be as much of a disappointment to the management of the journal as it is to the one sending the photograph. So a hint or two to those who have had little or no experience may be useful.

One of the things of importance is that a photograph be sharp and distinct. Lacking in this respect, the photograph itself may be beautiful, but a half-tone made from it may be so indistinct as to be worthless.

Years ago photographs had a glossy surface, but of late years a soft surface without any glossiness is more in favor. Yet the glossy surface is the right thing if a half-tone is to be made from it.

To be of interest in a bee journal, a picture should of course be in some way related to beekeeping. The most obvious thing in that relation is an apiary. No apiary is so commonplace as to be without interest to a wide-awake beekeeper, and a good picture of one is the next thing to the apiary itself. Don't hesitate to send in a picture because your apiary is not large. To be sure, if any apiary contains a very large number of colonies, that fact alone makes it of interest. But on account of beautiful surroundings, or for some other reason, one may care more to look upon the picture of a dozen hives, or even one or two, than upon some other picture with a large number.

In almost any kind of picture it is desirable to have one or more persons appear, and this applies especially to pictures of apiaries. But the persons should be incidental and not appear as if expecting chief attention. If two or three figures are lined up stiffly in front of the camera, it has the appearance that they are there especially to have their pictures taken, and it was a mere incident that a number of bee-hives happened to be in the vicinity. Instead of that let the person or persons appear just as they would naturally appear at their work, and then there will be a picture of the apiary with one happening to be at work at the time the picture was taken.

It should be nothing strange if the first picture sent should not be available and subsequent ones satisfactory. The "Try, try again" motto applies here. So don't hesitate to send in pictures, and to send more than once. The worst that can happen will be that the publisher will express his regret that the pictures cannot be used. And the regret will be real.

Prevention of Increase

Our forefathers prevented increase by the simple plan of returning the swarm to its hive as often as it issued. Simple, to be sure, but somewhat laborious; for a swarm might issue several times with the old queen, and when the first virgin emerged, there would be swarming until the last virgin was allowed to issue from her cell. But when this happened, there would be no more swarming for the season, and so no increase.

But this plan obliges some one to be on the watch during the middle of the day for several days, and would by no means suit that rather large class of beekeepers who keep a few colonies that they can look after only evenings and mornings.

For such beekeepers a large hive is a first desideratum. It may be a Dadant or a Quinby hive; it may be a 12-frame Langstroth; or it may be a hive of two shallow stories. With such hives there have been apiaries with not more than 5 percent of the colonies swarming, thus lessening the problem of preventing increase. Another desideratum is clipped queens.

As a third factor in making the problem easier, let extracted honey be produced in preference to sections. Then use the Demaree plan to prevent swarming, a plan given to the public years ago by a Kentucky beekeeper, G. W. Demaree, and lately brought forth again as something new. When danger of swarming begins, set beside the hive an empty hive-body, and into this put all the combs with adhering bees except one comb, preferably the one with the least brood. Leave this comb in the old hive, and also the queen. Fill up the hive with empty combs—no matter if a little honey in them—or with frames filled with foundation. Put an excluder over the hive, on this set the story of brood, killing any queen-cells that may be present, and fill the one vacancy with comb or foundation. A week later queen-cells may or may not be found in this upper story, and if found they must be destroyed. As the brood hatches out of this upper story the bees will fill the empty cells with honey, and the story of brood will become an extracting super.

Some, however, will prefer section honey, and for them the Demaree plan will not work. They may have small hives, not caring to change. So it may be well to give a plan for those who are working for section honey, whether with large hives or small, seeing their bees only evenings and mornings. Queens must be clipped. About once a week look for queen-cells. In about eight days from the time an egg is found in a queen-cell the cell will be sealed. Then a swarm will issue with the old queen, if the beekeeper does not interfere. So it may be as well to put the old queen out of the way a little before this. Then about a week from the time the cell is sealed a virgin will emerge, ready to issue with a swarm. Before she has a chance to hatch, kill all cells but one. That ends the possibibility of swarming, and of course also the possibility of increase.

It may not, however, always work so smoothly. By some means you may neglect to notice the queen-cells until the swarm is ready to issue, and actually does issue, and you are not on hand to observe it. Well and good, let it issue. The queen, being clipped, cannot go with the swarm, and after whirling about in the air the swarm will return to the hive. Possibly it may settle on a tree for a time, but it will return, seeing there is no queen with it. The queen may wander off on the ground and be lost. She may find her way back into the hive, and if she does the swarm will issue again in a day or two, and this will continue for several days, so long as she returns to the hive. It is not very likely, however, to continue the week; either the queen will be lost, or the bees, becoming impatient, will ball and kill her. At any rate, the bees will not go off until a virgin has emerged to go with them. Before that you can surely be on hand to kill all cells but one.

Instead of killing the cells, you may elect to take a different course that has advantages. Before the virgin has time to emerge from her cell, go to the hive each evening after the bees have stopped flying, when it is still, and put your ear to the hive. You will hear all sorts of hummings and buzzings and squeakings, but pay no attention to them unless you hear something especially distinct, loud, and entirely separate from the other noises. Continue listening each evening until you hear that noise, and when you do you will have no sort of question that you are hearing a new sound, the sound of a queen piping. It will be a sharp, clear, long drawn out tone, p-e-ep, followed by several other tones, each one shorter than the one preceding. In response to it you will hear one or more vigins in their cells replying in a more hurried manner, "quahk, quahk, quahk." Then for a few minutes you will hear nothing but the usual murmurs in the hive, to be followed again by the shrill and deliberate tone of the queen which is at liberty.

Next morning take out the frames one by one, shake or brush all the bees from each one in turn, and kill *all* the queen-cells found; return the frames to their places and close the hive. Don't worry about the virgin at liberty running over the combs; she will take care of herself, and you are done with swarming and increase for that year.

Other plans may happen to suit your case better; but the one given is simple and efficient. C. C. M.

MISCELLANEOUS NEWS ITEMS

Field Meeting at Hamilton.—At the field meeting at Mt. Pleasant, Iowa, last year it was decided to hold a joint meeting of the Iowa, Illinois and Missouri beekeepers' associations at the Dadant apiaries in 1915. Officers of both the Iowa and Illinois associations were present at that time, and Mr. W. B. Moore, of Illinois, and J. W. Stine, of Iowa, were appointed to represent their respective associations in making arrangements for the meeting. R. A. Holekamp was selected to represent the Missouri association on this committee, as no officer of that association was present.

September 7 has been selected as the date for the meeting, and a conference of inspectors has been called to meet at Keokuk the following day. There are ample hotel accommodations in both Hamilton and Keokuk, and a good attendance is expected. The big dam across the Mississippi, together with a visit to the Dadant apiaries, makes an attractive opportunity to combine a pleasant visit with beekeepers from other localities with a sight-seeing trip worth while. It is expected that prominent bee-men from distant States will be present.

The committee has not as yet arranged the program.

Frank C. Pellett.

We will be very glad indeed to entertain our many beekeeping friends here on Sept. 7. As soon as a definite program has been arranged, it will be given in these columns.

W. L. Porter, Caldwell, Idaho.—We had hoped to be able to give our readers a biography of Mr. W. L. Porter, who was for many years the efficient president of the Colorado Honey Producers' Association mentioned in our April and May numbers. But although we have succeeded in obtaining his photograph, Mr. Porter's modesty has prevented him from giving us any facts about himself. Suffice it to say that he has been and is yet one of the most extensive and successful honey producers in the United States.

W. L. Porter, of Caldwell, Idaho

Michigan's 50th Annual Meeting.—The oldest beekeepers' Association in the United States will celebrate its 50th annual meeting at Grand Rapids, Mich., on Dec. 15 and 16 next.

The original records of the association, still in good shape, show that Prof. A. J. Cook, now State Commissioner of Horticulture for California, was the first secretary of the association. At that time Prof. Cook was connected with the Michigan State Agricultural College, East Lansing, Mich., teaching Entomology and Apiculture.

For over 20 years, since Prof. Cook left, beekeeping has not been taught at the college, but in 1913, I had the pleasure of introducing the subject once more. It is a coincidence that the present secretary of the association, after so long a lapse, is connected with the Agricultural College, trying to disseminate the subject of beekeeping, as was the original secretary.

Looking over the records we find the names of many prominent beekeepers who have since gone to their reward. Among others these names are found: Ezra Rood, the first president; Bingham, Gallup, Otis, Taylor, Hilton, Hutchinson, etc.

In one of the early meetings I find that a paper was read by the secretary, on "The Apiary and Its Arrangement," by A. I. Root ("Novice"). Wonder whether Mr. Root can remember this paper? Besides Mr. Root, many other names are prominent; one other, who is still alive, Mr. M. M. Baldridge, of St. Charles, Ill., who read a paper on "The Extractor."

We hope to have many old memories revived at Grand Rapids, so that the present day bee-men may get a glimpse of what the pioneer beekeepers had to contend with.

The association is trying to arrange a meeting that will be a little out of the ordinary, and with the cooperation of the Michigan beekeepers, this should be possible.

We aim to make a special effort to get a good exhibit of honey, and any beekeeper who would like to make an exhibit would do well to write me. By making plans at this time the choice of the crop can be saved and a nice exhibit prepared,

We shall be pleased to receive the dues of any members who have not paid, and from others who would like to join the association. In a future issue we shall have more to say, but do not forget that the dates are Wednesday and Thursday, Dec. 15 and 16, 1915, and the place Grand Rapids, Mich.

F. Eric Millen, *Sec.-Treas.*

Two Faults Committed by Publishers.—It is not our custom to insert letters of praise, concerning our Journal, in the reading columns. The reader will find two short exceptions to this rule in this number.

There are two faults committed by publishers which we wish to avoid. One of them is to give special notices, of goods offered for sale, in the reading columns. The other is to cut articles off at the bottom of the page and refer the reader to the other end of the paper or magazine for the continuation, just for the sake of beginning the next page with a flaring headline. We do not approve of either, do you?

Monthly Crop Report.—The monthly crop report of the Secretary of Agriculture, under date of May 10, shows Missouri and Illinois to have the lowest average in percentage of colonies of bees, condition of colonies and conditions of honey-plants. Let us hope that the future will show an improvement. At the date of this writing, May 15, the ground is too dry and prospects are bad in Hancock Co., Ill. But there has been rain elsewhere.

Investment in Bees.—We have a request from one of our subscribers to ask through these columns what each beekeeper considers a fair estimate of an investment in 100 colonies of bees, and whether wintered out-of-doors or in the cellar.

The Siberian Beekeeper's Ten Commandments.—1. The bee is God's working insect, love her with all your might.

2. Don't be allured by foreign races of bees. The northern bees are just as good for rational beekeeping.

3. Don't grumble at ill-success, don't lose courage. Find the cause of your failure and let it serve as a lesson.

4. Help the bees in their work and learn their life, spring, summer, fall and winter.

5. Prefer strong colonies to weak ones, transfer log hives to frame hives and supersede the old queens, then you will see your apiary flourish.

6. Pack the hives in the fall to keep them warm during winter and spring.

7. Never admix anything to the honey you wish to sell that will spoil its high quality and character.

8. Never supply any one with irregular supplies for the apiary. After harvest, extract the honey with care, but leave enough for wintering.

9. Don't let any one know that, in Amour Province, bad beekeeping is due to your neglect.

10. Be not jealous of the success of your neighbor beekeeper. His example may make you acquainted with the requirements of the bee's life and nature.

Rev. A. Luppov.

Translated by Peter Schaffhauser.

Beekeepers' Meeting.—There will be a meeting of the New Jersey Beekeepers' Association in Geo. A. Kelley's apiary at Boonton, N. J., June 8, 1915.

E. G. Carr, *Sec.-Treas.*

Bumblebees Wanted.—I desire to request for observational purposes, a favor through your columns. Would it be agreeable for you to ask editorially, the beekeepers of the country, to send me for identification, bumblebees which may have entered bee hives and have been killed, or bumblebees which beekeepers may see fit to kill in the act of entering a bee-hive?

These specimens may be packed in cotton and shipped in a small box. In each instance, however, I would like a word of information as to where the bumblebee was found, and the name and address of the sender so that due credit may be given.

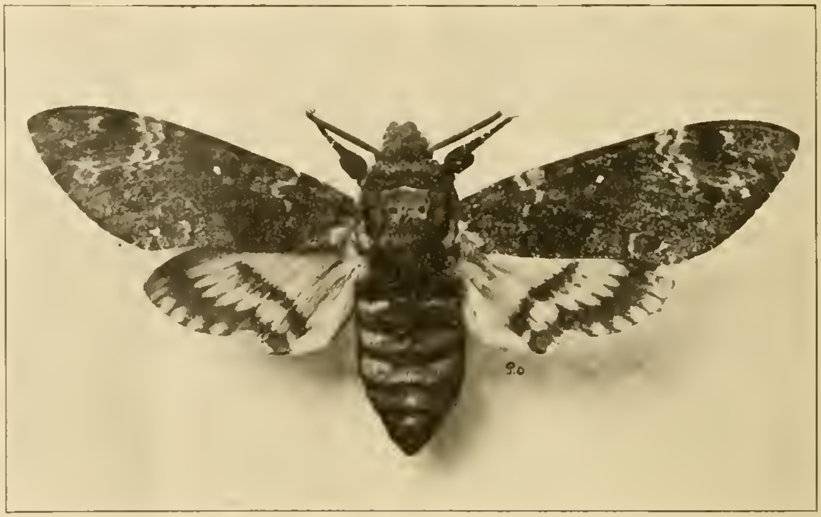
The material I will explain is desired for classification. A student wishes to determine some interesting points relative to the behavior of bumblebees in relation to bee-hives, and what might be called robbing among bumblebees.

I hope through your courtesy it may be possible to collect a number of specimens from various parts of the country or world should that be possible. I assure you that your interest in this investigation will be greatly appreciated. B. N. GATES.

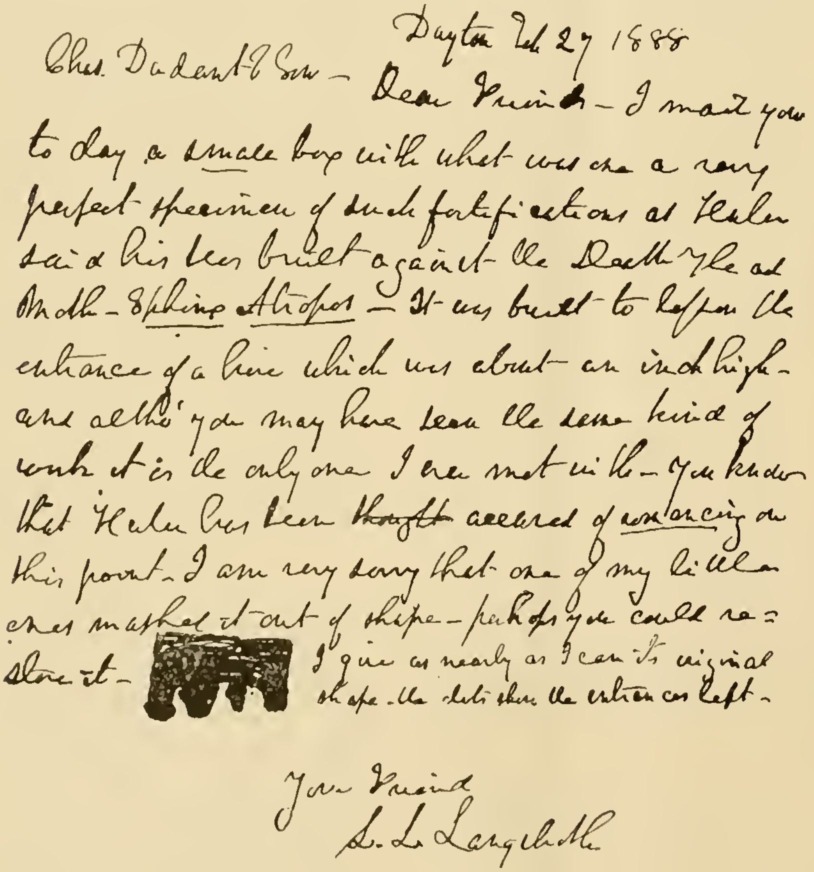
Department of Entomology, Amherst, Mass.

Death's-Head Moth.—In our "Notes from Abroad" for April, the readers saw a description and a woodcut of this insect. We did not then know that a kind European friend, M. Pierre Odier, of Céligny, near Geneva, had gone to the trouble of securing for us some photographs of this wonderful insect, which photos were then on the way from Switzerland to us.

We have also since found among our voluminous correspondence from Mr. Langstroth, a letter concerning this insect and the braces which the bees build against it and other intruders. We give a facsimile of his letter. We also add a quotation from the South African Bee Journal on the same subject.



THE DEATH'S-HEAD MOTH (Photographed from life)



Dayton Feb 27 1888

Chas Dadant & Son — Dear Friends — I mail you to day a small box with what was once a very perfect specimen of such fortifications as Huber said his bees built against the Death's head Moth — Sphinx Atropos — It was built to lessen the entrance of a hive which was about an inch high — and altho' you may have seen the same kind of work it is the only one I ever met with — You know that Huber has been ~~thought~~ accused of romancing on this point — I am very sorry that one of my little ones mashed it out of shape — perhaps you could restore it — I give as nearly as I can its original shape — the dots show the entrance left —

Your Friend
L. L. Langstroth

"When the nest (bee-nest) is in a hollow tree, with only a narrow opening, one should avoid thrusting the arm into it to remove the honey, if one does not wish to run the risk of a sudden death or, at the very least, of terrible suffering—different species of venomous snakes hide there readily, especially the 'koper kapel' of the colonists.

"It is to these snakes alone that one should attribute all of the accidents of which the Boers still like to accuse the harmless Atropos sphinx (moth), death's head, that they call the groot honingbije. This sphinx, more abundant in southern Africa than in Europe, loves honey and dares to go even on the honey-combs; but most frequently one finds it resting on the bark (of the hollow tree), just a few inches from the opening; all those that I obtained were collected in such positions.

"The Boers have as much horror of the moth as of a snake. They imagine that its proboscis is a poisonous sting, and great was the astonishment of some of them when they saw me touching one of the moths without fear and putting it into my mouth to prove its harmlessness. They were so convinced of its dangerous nature that they thought I wanted to put an end to my life. They were impressed to such an extent, since childhood, with these superstitions that, in spite of all my efforts, I was unable to persuade a single one of them to do what I had done."

THE DEATH'S-HEAD MOTH FROM LIFE

Weighting the Bee-Veil.—In clipping queens this spring, I forgot to put my glasses on and never noticed it until I had a hive open. They were in a case in my vest pocket, and I managed to get them on without removing the veil, dropping the case down inside the veil.

I had a happy surprise, there being no more wrinkling or blowing about of the veil. In looking down or looking up, the veil is always straight, but the pull is so gentle that it is unperceived.

I had thought to get a marble to use in place of the case, but after thinking the matter over, have decided to try a 5-cent rubber ball, and then if it isn't heavy enough will put a little water in until I get the right weight.

Brooklyn, Iowa. B. H. TRIPP.

This plan is similar to one used in some of the Woodman veils which have a heavy piece of cord sewed near the bottom and around the veil to keep it from blowing about.

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Attention Minnesota Beekeepers!—In case you have, or suspect your have disease in your apiaries, communicate at once with me and I will make every effort to reach you without delay.

CHAS. D. BLAKER,
State Inspector of Apiaries.
4420 Grimes Ave., Minneapolis, Minn.

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June is Promising.—The bees in Illinois recuperated rapidly from winter dwindling, owing to a mild month of April.

The month of June is opening with a good prospect for white clover in many parts. In Hancock county there is no white clover, owing to the drouth of 1914. But the sweet clover is very promising and the bees are in excellent shape.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Bees in Corner of a House

A New York sister writes: "In the summer of 1912 a swarm of bees took possession of a corner of my house, and made its home between the walls. They produced honey all that summer and the summer of 1913. During January, 1914, I opened up the inside wall, taking off lath and plaster, and was fortunate in removing a large quantity of honey, leaving enough for the bees to winter on. I then covered the space with wire screening and put up a temporary door. This spring they had worked very hard, so I thought I might remove more honey. When we took the door away we found the bees had come on the outside of the wire and were living on the honey, getting it through the holes in the wire.

"Of course, the most of the colony is on the inside of the wire. I just wish you could see the bees and honey. It seems as if I must take up the honey it looks so delicious, but some of the elegant white comb is empty. What to do I do not know. If I do not take up any honey the bees will not have any room to work this summer. I wish I knew how to get the bees started in a bureau hive like my father always had.

"Can you tell me what to do? I wish you could look at the honey and bees; it is a beautiful sight, tier after tier of honey and so many bees."

M. ANNA KNOX.

Brewster, New York.

You are to be congratulated that the bees are so easily accessible. You have already had experience in cutting out some of the combs, and all you have to do is to cut out the rest of the combs in the same way. You probably used smoke in driving the bees off the combs you took, and you will need it again. Provide yourself with a movable-frame hive; and it will be better if some of the frames are filled with comb foundation.

After driving some smoke upon the combs that are first within reach, if the bees do not get out of the way fast enough to suit you, you can brush them with a wing or wing-feather of a turkey or some other fowl, and indeed a whisk broom may serve, although rather harsh. Never mind if you don't get all the bees off before cutting; you can brush them off afterward.

From what you say there is likely more honey present than the bees need, and you can save for yourself some of the whitest combs; but leave them at least 5 or 10 pounds. You will save carefully all the worker-brood. The drone-brood may be thrown away. You will distinguish it from the more numerous worker-brood by its larger size.

In putting the combs in the frames, it will be well to provide yourself with a bake-board or some other board at least as large as a frame. Lay on this two or three thicknesses of cloth to make a bed for the brood. Provide pieces of tape long enough to reach around a frame and tie. Strips of cotton cloth one-fourth or half-inch wide will do. Lay these across your board, lay your frame on top, and put into it the combs, tie, then raise board and all so the top-bar will be up, and hang your frame in the hive. Of course, you must cut away enough of the combs so they will fit in the frames, and it will be well to have rather a tight fit, so that there must be a little crowding to get the combs into the frame. In gauging the distance apart of your strings, you will be guided somewhat by the size of the pieces of comb put in the the frame; the smaller the pieces the more strings.

The hive should be set as near as possible to the place where the bees have been in the habit of entering, encouraging them to adopt the new dwelling. After the bees have become accustomed to the place, say in three or four days, the hive may be moved away 4 or 5 feet each day until you have it where you want it.

C. M. CONRAD IN HIS APIARY AT FLANAGAN, ILL.

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Shall I Take Up Beekeeping?

"Please tell me if there are many women engaged in beekeeping, and would I be considered out of my place to take it up? I do not know if it is thought to be a work for women or not. I know nothing about the business only as I have read of it, but I have always wanted to have a lot of bees and to care for them. I love them. They never sting me, and I am not afraid of them.

"I am so situated at present that this seems the only way for me to try to earn a living for myself and little daughter. I live on a farm, and there is plenty of room for bee-hives. I cannot raise poultry of any kind, and my eyes are too weak to do fancy work or sewing, so I have turned to beekeeping." [MRS.] BEATRICE QUACO.

Pekin, Ind.

A good many women are engaged in beekeeping, yet rather few compared with the number of men. Just why this is so it is not easy to say, for of late years there has been a wonderful increase in the number of women entering different lines of business formerly followed by men alone, while for many years it has been considered entirely appropriate for women to engage in beekeeping. Instead of being crowded out by beekeepers of the sterner sex, they have been welcomed, and at bee conventions the few women attending are always treated with the greatest consideration.

In some respects beekeeping is especially adapted to women, with their deftness and delicate touch. The business can be managed so that there is not much heavy lifting, and when it is needed, a woman with little physical strength can get the help of a man or boy. In many cases, however, there will be an increase of physical strength for the outdoor exercise, together with an absorbing interest, tend directly to an increase of health and strength.

To start with, your love of bees is an important asset. Add to that the study of a good bee-book, such as Dadant's Langstroth, and then begin with two or three colonies, letting your book-knowledge and your practical experience grow together, as also the increase in the number of your colonies. Better, however, be prepared to take a few stings, for if you do very much with bees you may not find them always so considerate of your feelings.

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Requeening and Building Up

"The letters in the American Bee Journal have been so much help to me that I am constrained to give my experience in the hope of helping some other novice. I have only had one season's experience, having begun last spring with four gums. These I have increased to ten, getting only about 60 pounds of honey, as the season was very poor.

"I seem to have hit upon an unusual plan for requeening and building up for special honey flow. I take the queen and all the frames from the hive-body except one containing eggs or larvæ, and put in a separate hive-body. I now fill all or nearly all the remaining space in old hive with brood comb or comb foundation. Over this I place one or two supers, then a piece of wire cloth somewhat larger than the super. On this I place the hive-body containing queen and frames with adhering bees, leaving small opening at first at the top under covering, suspending alighting-board near opening. I leave them this way until the honey-flow is on. I then remove the queen and all the frames from the upper hive-body with part of the adhering bees, and put them somewhere else to start again. Be sure that the bees left below in the first operation reared a queen and that she is laying before taking away the old queen.

"If no increase is desired, remove the wire-cloth and kill the queen you least want. If in looking for the queen you have to smoke one colony, be sure to smoke the other else they will fight, otherwise I have had no trouble. If the honey-flow is short and no increase desired, remove all frames and young bees from the upper hive and strengthen the weak colonies or dispose of them by scattering among other colonies, as they will consume all surplus. After a day or two close the top opening at night, after the field bees are in.

"This method does away with the swarm trouble, but cannot be used for requeening and building up for a honey-flow unless there is some flow of nectar, as the bees in the lower hive-body will rob those above, also other hives. I think the best time is near the end of a flow.

"I advise all half-sick women, and men, too, who can learn to love and like to care for bees to try beekeeping. I can never tell any one how much they have meant to me, coming as they did after a severe operation and long years of semi-invalidism. I spend hours of pure happiness with them, where otherwise I would have been restless and lonely."

Hattie L. McManus.

There are some good features in this plan. When the young queen is reared below, and the old queen and brood taken away from above, all the flying force will still be left, and with no notion of swarming there should be good field work. It will be learned only by trial how well it may be adapted elsewhere. One who with only a single year's experience blazes out a path for herself ought to have a fine career in beekeeping, and further reports will be awaited with interest.

CALIFORNIA BEE-KEEPING

Conducted by J. E. Pleasants, Orange, Calif.

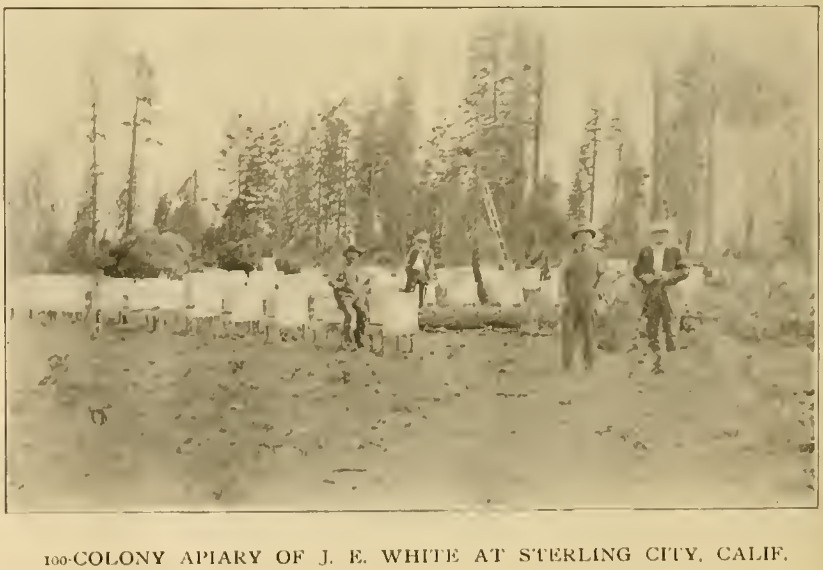
The California Outlook

The season here, as has been stated before, started out very favorably, with good winter rains. This is always the prime essential for a honey crop here. The bees bred up early and were, generally speaking, strong in numbers up to April 1. From March 29 to April 20, the weather was very dry. An unusually dry period for the time of year. Things were beginning to look "dubious." But on April 20 there was rain, and this was the beginning of a very moist period of long duration, lasting until May 8.

During this time almost four inches of rain fell, and almost continuously the weather was cloudy and misty. This kept the bees in, and they not only consumed all their stores, but in many instances had to be fed. It was hard on them, especially as European foul-brood is prevalent in many apiaries.

It is still a mystery how this disease is carried. If this could be learned it would be of much practical help in preventing its spread. I wish we could prevail upon our investigators at the experiment stations to send a few men well qualified to work in the field in infected districts, to work on this one problem.

There was considerable honey taken from the orange flow until the cold, damp weather interfered. Orange flow commenced about April 10, and lasted a month. Extracting from sage and other wild bloom will be delayed about a month. During the last few days the bees have been working finely on sage and hoarhound. There have been reports from different sections of the black sage looking badly, and one or two rather alarming reports from Santa Barbara and Ventura counties



100-COLONY APIARY OF J. E. WHITE AT STERLING CITY, CALIF.

about the so-called sage weevil.

Our sages here were somewhat affected. In some places black sage looked rather bad. I will quote from a letter from Mr. Mendleson, of Ventura, as to conditions there some 10 days ago: "Weather still very cloudy. The scale hive losing ½ to ¾ pounds per day. The worm is making sad havoc in many places in both black and purple sage. It destroys the whole case of the blossom and buds. It has not appeared at my main location yet. Warm sunshiny days will kill the pest. Many are feeding large quantities of syrup to keep the bees alive. A condition I have not seen heretofore. The ground is wet deep. Hot weather will give us the desired honey flow. I have not seen so much moisture before and no nectar secretion, though 1884 was similar. It looks to me as though those having white honey this year ought to get a good price." This was written on May 9.

The desired warm, bright weather has come, and the black sage is looking much better, and the conditions at present look favorable.

The year 1884 spoken of by Mr. Mendleson was one of great rainfall and a late season for the bees, but we got a fine crop.

The worm that has affected the sage is the larva of a moth, as reported by our Horticultural Commissioner, Mr. Bishop, and not a weevil. He has sent the specimens we took him, to the State Experiment Station for identification. It is a small bluish white worm about ¼ inch in length.

With the present honey-flow the bees are perceptibly overcoming European foul brood in the infected apiaries. Of course, this may be only temporary, but the outlook is favorable toward helping to eradicate it to a considerable extent. We have now had six days of bright weather to date, May 15, and the indications are for continued fair weather.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Using Lye for Cleaning Separators

Several beekeepers have told me that lye makes the wood separators brittle, and that they soon break to pieces. If this is the case, lye should be used with care. Probably the separators, if washed off with clean water at once, would not be seriously affected.

Western Conditions

Bees are building up rapidly and prospects seem favorable in spite of the freeze two weeks ago (or early in May). Alfalfa and sweet clover were frozen down pretty badly, but it will not seriously affect anything but the first crop of alfalfa and make the season some later. Dandelions and fruit bloom are now just past their prime, and many colonies have stored and sealed large amounts of dandelion honey. There will be a large increase in bees this year, if present conditions prevail.

The West will have honey to ship this year, as it has always had some in the past, but whether it is a full crop or a partial one remains to be seen. Sweet clover is in more evidence this year than last, and we hope for a good deal of help from it this year.

Shipping Two Carloads of Bees

Preparing two carloads of bees (800 colonies) for shipment a thousand miles, during the middle of May, is no small task, but for the last two months we have been at it, and the bees were shipped May 13. The colonies were all in 8-frame Langstroth hives with fairly uniform bottom-boards.

A 36-foot cattle car was loaded with 612 colonies. Three rows of hives ran lengthwise of the car on each side of the alley, running the full length of the car. This alley was about two feet wide, and made it possible to spray every colony with water. Each row of hives was six layers high, which brought the top hives to the top of the car, or very near it.

Wire screen frames were nailed on top of each hive, and two 2x2 inch strips 3½ feet long were laid on top of each three hives between the alley and the side of the car. These two inch pieces made it possible to spray every colony easily. Nine hives in length and three hives in width on each side of the alley were in one end of the car, and eight hives in length and three hives in width on each side of the alley were in the other end. All were six hives in length. This left nearly all the space between the doors for bracing and for placing the water-cans, pump, and other material.

In the other car, which was a 50-foot automobile car, were placed 186 colonies, most of which were so strong in bees that supers were placed on top to give abundant space for clustering. The covers and supers were placed in the ends of this car, and the 186 colonies were loaded near the doors.

In bracing the sides of the piles of hives in the alley, 1x4 inch stuff was used for uprights with 2x4 inch running across for braces.

The day we loaded was very warm, and the bees were very cross. It was a tedious and painful job, but both cars were loaded on time, and before the cars were 20 miles on the way the bracing was all finished. Fortunately the weather turned cool, and this made it easier on the bees *en route*. This shipment was sent to Filer, Idaho, and was one of the best outfits I have seen, taking condition of bees and hives into consideration.

CANADIAN BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

Prospects for Ontario

Prospects for a crop of honey are fair for the Province of Ontario. In some sections, including York county, the acreage of alsike, which is our main source of honey, is very light. But on the other hand, the clover everywhere is in good shape with practically no winter or spring damage. Rains during the past two weeks have been general and vegetation is looking fine. In many sections the clover is plentiful, and I am glad to say that such is the case at our large apiary up north. Of course the mere fact that we have clover in many parts of the Province does not insure us a crop of clover honey by any means, but when we have no clover we are quite sure there will be no crop.

Conditions in Our Two Yards

The unusually warm weather during the latter part of April that forced vegetation ahead rapidly, has been followed, as is generally the case, by just the opposite for the first ten days of May. Today, May 12, has been the first day that bees have done anything for about two weeks, and the yellow willows and hard maples passed their period of blooming without the bees getting a taste from them. These are the best early sources of nectar we have in these sections, and as a result of their failure, brood-nests in our York county yards are very light in honey, almost all of it being consumed during the last three weeks, as breeding has been going on rapidly.

At the yard 100 miles north, willows are at their best, and bees are working on them nicely. Strange as it may seem, although these bees are so much farther north than our home apiaries, they are away in advance of our bees at home, half of the apiary being supered, and a few with two supers on. Different reasons account for this, of which the following are the main ones: Total failure of the crop here in York county, and that means a lot of old bees going into winter quarters. Up north we had a late flow of about 5 pounds per colony, and that means lots of young bees for winter. Then, again, no requeening was done at the home yards, owing to poor season, while at the north yard nearly all colonies have young queens.

Another factor is that, while our bees at home had sufficient stores for wintering, yet they have not had quite enough in many cases to allow the bees to go ahead rearing brood fast, even if the weather was too cool to allow much gathering of stores, honey or pollen. Up north every hive was filled solid in the fall, owing to the late flow from asters, and the bees have an unlimited source to draw on. In fact, in many cases it is necessary to extract some of the combs so as to give the queens room to lay eggs, as the hives were actually "honey-bound," as we sometimes say. Between the two extremes of having too much honey in the hives, as compared with the prospect of having to feed many here soon, unless fruit bloom yields better than usual, needless to say which I prefer, especially when sugar is as dear as at present.

While it is a little trouble to lighten the brood-nests of honey, yet the work is well paid for, as the honey is fair and sells readily, more than paying for all the work, to say nothing of having the satisfaction of knowing that the colonies are in first-class condition. While fall feeding is a necessity very often in our locality, spring feeding is always a calamity in my judgment, and only practiced when absolutely necessary to avoid starvation and keep brood from suffering.

How to Handle Combs Filled With Candied or Granulated Honey

Quite a number are inquiring as to what to do with combs filled with candied or granulated honey. Some are melting them, thinking that the only way to get rid of the honey in the combs. I have a few of these combs filled with honey from the hard maple a year ago, and I shall not melt them up unless it is absolutely necessary. If these combs are given to strong colonies later on in the season, I feel sure they will be all right, for even if some of this honey is thrown out by the bees, that is better than melting up good combs.

In looking at a few such combs today I could see quite a difference already, as the honey was much softer than a few weeks ago. With real warm weather later on, I feel sure that everything will be all right, so go slowly in melting up good brood-combs that are worth as much as real cash to the beekeeper.

Old Combs

"The older the combs of the brood-chamber the more cocoons they contain," page 152, May American Bee Journal. I wonder if that is strictly a fact, or is there a limit to the amount of cocoons the bees allow to gather in the cells. Today I have been handling some combs that must be at least 35 years old; perhaps they are 40. They were used by my grandfather, and he has been dead about 25 years. In so far as I could see, these combs had cells just as large as combs only two or three years old, and the bees hatched in them were just as normal in one comb as in another. It hardly seems reasonable to believe that these cells have cocoons of 40 years' accumulation, and I am of the opinion that the bees in some way remove the cocoons when they begin to interfere too much with the normal size of the cells.

Bee demonstration
Fyffe (Apiary)

A GROUP OF BEE ENTHUSIASTS AT A FIELD MEET IN HARRISON, ONTARIO

Beekeeping in North Carolina

Inquiries are coming in to me as to the possibilities of beekeeping in North Carolina. This is because my father "winters" in that State, and thinks so highly of it as a bee country. I have little first hand information of the country aside from what father tells me, and even if I knew *all* about the place, perhaps our North Carolina beekeeping friends might not thank me for telling it publicly.

My father stays near Democrat, a small village about 20 miles from Ashville. I understand that around the latter place it is not very good for beekeeping, as there is a lot of scrub oak and other things that do not produce honey. Where father visits they produce beautiful honey. I have *prima facie* evidence in a pail of splendid basswood honey, for which my thanks are due Mr. Samms, of Mars' Hill.

Two years ago some other friends sent me samples of locust, and from another source of which I am not sure as to name, and in both cases the honey was delicious and as good as we produce here in Ontario, and that is "going some." No doubt there are difficulties, as elsewhere, and the beekeepers' path is not all a bed of roses, but I think that North Carolina is a pretty good place to keep bees. Poor roads are very much in evidence, I believe, and the transportation question in the matter of establishing apiaries, etc., is one of the main drawbacks of the country.

NOTES FROM ABROAD

By C. P. Dadant.

Nice, a well-named city, was our next stopping point. Those of our readers who have followed these "Notes," since the beginning, will perhaps remember that, in the number for February, 1914, I made mention of a college mate who had become a general in the French army. His headquarters were at Nice. We had not met each other for 50 years, not since our boyhood, when we had sat side by side on the college benches. It was a treat to meet him. However, our pleasure was marred by two incidents. A trolley accident had killed 17 soldiers of the garrison two days previously, and an immense military funeral was under way when we arrived. In addition, my wife was made sick by some accidental cause. I had to hunt up a doctor. This was not a very pleasant thing to do when you are 4000 miles away from home. The physician attributed her complaint to ptomaine poisoning, and advised a couple days of rest. We were thus tied down for a short time. This was the only unpleasant incident in the entire voyage.

I called at the home of Mr. Baldensperger, who is one of the oldest and most experienced apiarists of the Old World, and whose home is at Nice, but he was at his country place, some 30 miles away. The neighbor lady who imparted this information to me took my card and promptly shut her door in my face, as if I had been a burglar.

So, aside from our visit with my old comrade, our stay in Nice was not very *nice*. We can't have everything always as we would wish. But the weather was delightful.

We had a very graceful invitation from the beekeepers of Marseille (in English Marseilles) to stop there for a couple of days. We had set the day and they were expecting us. Our mishap delayed us 24 hours. So we sent them a telegram. When we reached the hotel in that city, we found two letters informing us that they would call upon us as soon as they were apprised of our arrival.

If you want to see whole-hearted, enthusiastic people, go to Marseille or Bordeaux. They welcomed us, they overwhelmed us. We spent two days in a whirlwind of enjoyment and entertainment.

They first took us to the "Cannebière," which is the "grand boulevard" of Marseille. As the Marseillais are choke-full of fun, and proud of their city, they say: "If Paris only had a Cannebière, it would be a little Marseille." They also inform the visitor that the Cannebière leads all the way to New York, the only thing necessary being to walk down to the port and take a ship for the latter city. Luckily, they told us, a large sardine, which encumbered the entrance to the port, had just been caught.

A very interesting trip, which we made at once, was a visit to the "Frioul," an island about two miles out in the bay, in which Mr. Barthélemy, the manager of the experimental apiary, has begun select queen-rearing, by bringing there some choice colonies of both queens and drones. However, the experiment is yet in its initial stage, only a few queens having been fertilized thus far. The hives are located in an old stone building close to the water's edge. I suggested to him the selection of a better spot, a little more remote from the seashore. I know by my experience along the Mississippi, that queens easily become dazzled by the reflection of the sun in the water and drown. As the island is hilly and has a little valley in its center, it should be possible to secure a number of good matings. The isolation is complete, for the nearest shore is a thickly built port. There can be but little inducement for the bees to cross the intervening space between the cultivated suburbs back of the city and this island. It is a more positive isolation than that of the Swiss mating stations.

On the way to this island we passed the "Chateau d'If," renowned by the fame of Alexander Dumas' novel, "Monte Cristo." It is a barren, ugly ruin, but is regularly visited by tourists, while the Frioul, being a fortified naval spot is not open to strangers. I could not have visited it without the escort of our beekeeping friends.

The local association publishes a "Revue d'Apiculture," and possesses an experimental apiary, under the care of Mr. Barthélemy, already mentioned, who is also a teacher in beekeeping.

On the second day of our stay, we were offered an "informal lunch," which turned out to be a great banquet, with some 30 persons present. There we had occasion to try the local dishes, some "sea urchins" or echinoderms, a round fish resembling a large chestnut with its thorny outer shell; also the famous "bouillabaisse," composed of all sorts of fishes, with special sauce. We might say here that in each country we found new dishes and made it a point to try everything.

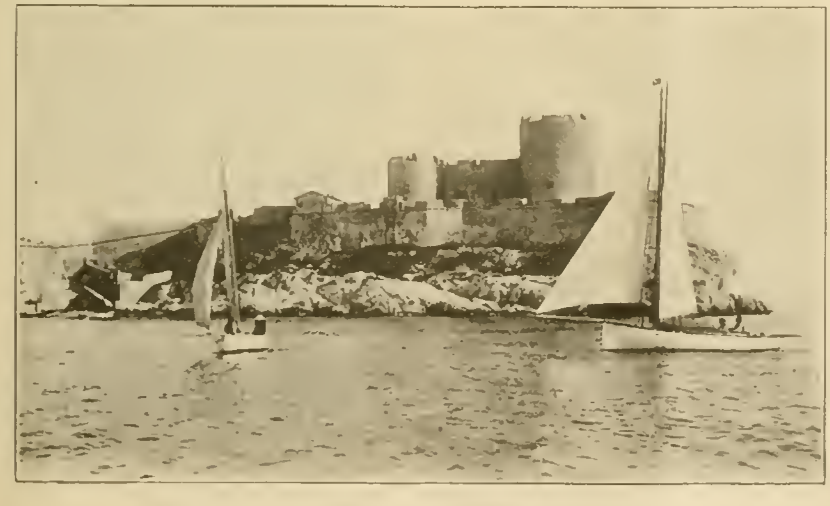
After the banquet, speeches were made and toasts offered. It was a pleasurable occasion, at which a number of ladies were present. In the afternoon an excursion was made to an apiary, that of Mr. Vinay, some four or five miles away, in the suburbs.

A method of cure of American foulbrood by the use of drugs was described to me, by Mr. Barthélemy, and I must say that I was, at first, very skeptical on this subject. He asserted that they had discovered very light cases, only a few dozen cells being diseased in each colony. But it was positively the ropy, coffee-colored disease. They had treated it by injections of formol, a 40 percent solution of formaldehyde, in each of the cells containing diseased or dead larvæ, besides spraying the diseased combs very lightly with this solution and burning, in the smoker, rags which had been sprinkled with the same drug. They also had fed the colonies affected with a solution of honey containing ⅓ gram (5 grains) of betanaphthol to the quart. Several colonies in this apiary had been treated as above in May and June, and when I visited it, in September, I was unable to find a single diseased larva, although we opened three or four colonies which had been diseased.

Mr. Barthelemy of Marseilles

However, these had been very mild cases, and I would hesitate to recommend the method for anything serious. Several hours' work is required for each colony, and it becomes necessary to protect them efficiently against robbers while the treatment is being given, unless the honey crop is on. During the honey crop is really the best time to make any operations in foulbrood treatment.

The vicinity of Marseille is a good honey-producing region. In the valley of the Rhône, they have fruit trees, sainfoin and alfalfa. On the mountains to the northeast, they have the heather of which I have spoken already several times. This plant gives very dark, thick honey, strong in taste. Its pollen is of light color, although the anthers which envelop it are brown. The wax produced from this dark honey is very light in color, while that from the white sainfoin is of deep yellow shade. That the comb is usually colored by the pollen of the plants harvested during its production does not admit of a doubt. The only question is whether the coloring is due to the consumption of this pollen by the bees or to a simple mechanical action, due to the fall of pollen grains upon the fresh-built comb from the hairs of the worker bees during harvest. This sub-



VIEW OF THE CHATEAU D'IF AT MARSEILLES

ject has been much discussed, but is not yet settled. I had hoped to get light upon it during our voyage. I failed. An article from Dr. Planta, in the Revue Internationale, in 1885, is the only thing that throws a partial light upon it. It needs further investigation.

Marseille has a very pleasant climate, though less sunny than that of the Riviera, from Nice to Spezia. It rarely freezes there, and the bees sometimes gather honey as late as December, I was told. However, the winter of 1913-14 has been an exception, and a picture of "Marseille Under the Snow," dated Jan. 14, 1914, was forwarded to us later.

We were to be back from the country trip at 5:30 p.m., as one of the apiarists, Dr. Vallette, had kindly offered to take us in his automobile to a seashore ride, around the "Corniche," but what with the bee-talks, hive opening, photo taking, and the trolley delays, we were not back until late, and our sea-shore ride was taken mostly in the dark. I must not forget that we also, during the forenoon, visited Notre-Dame-De-La-Garde. This is a church on a very high cliff above the city. The bird's-eye view of that large city of half a million souls, the port, the vessels, the islands and the Mediterranean sea, will long be remembered by us.

I cannot close this letter without mentioning the courtesy of the president of the association and of his lady, Mr. and Mrs. Sirvent, who invited us to come again and made us the promise of a gathering together of 150 beekeepers at our next visit. We would like to say something about each of the kind friends who welcomed us. To show them we have not forgotten them we will send each of them a copy of this number.

On the morning of a delightful day, Sept. 26, we made the longest trip of our European travels. We crossed southern France from east to west, mainly among vineyards. We passed Tarascon, famous from Daudet's Tartarin; Beaucaire, a village whose name is as familiar to French children as that of Yankee Doodle to American children; Nimes, noted for its old Roman arena; Narbonne, listed on the Baedecker guide for its "miel fameux" famed honey, harvested, we are told, from sainfoin: Carcassonne, the city of 54 towers, and at 9:30 p.m., we reached the little city of Lavardac, where Mr. Coutrel, one of the great honey producers of France, was awaiting us at the station.

CONTRIBUTED ARTICLES

Advertising

BY A. F. BONNEY.

In a recent mail I received a letter, asking if I thought the beekeepers of the United States could get a department in the "Patent Insides" of rural newspapers and thereby advertise honey. At the same time I was asked for any other suggestion regarding advertising honey. I had to say no to the first question, and I asked the writer something like this:

"If the present demand for honey in the United States is about 25 cents per capita, and the present supply about 40 cents per capita, how much can we afford to pay out for advertising to increase the demand 15 cents per capita?"

I left him to answer, but thought to myself that there *seems* to be an excess supply of 15 cents worth of honey in this country; that is, 15 cents worth per capita, and I said to myself, "A *surplus* is the hardest thing in the world to sell by advertising."

I gave the beekeeping world the Little Red Sticker, and our State inspector writes me that I would be surprised how general they are in use. "I see them everywhere;" he flattered and pleased me.

But I could not help remembering that some mighty smart beekeepers did not seem to grasp my idea of using the Red Stickers. Even Mr. Byer did not catch on, for I remember he said it would not pay him to use them, as he "had no honey to sell."

Again I want to call attention to the Little Red Sticker, and explain. It was gotten up for *national* honey advertising. It was conceived for the benefit of every beekeeper in *the world*, for if

EAT HONEY

were put on every letter sent out from the offices and homes of beekeepers, put on railway coaches, freight cars, depot windows—never mind what the agent says—on farmers' wagons and store windows, and send a few to friends and relatives, asking them to stick them up, it would not be long before we would begin to make an impression. One thousand of the Little Red Stickers to each 1000 beekeepers means a million stickers, at the funny little noise of 35 cents per man.

Now it is well known that five people read each newspaper. One thousand newspapers would, therefore, be read by 5000 persons, *but* not one person in ten would read a one-inch honey ad. Therefore, the number of readers is at once cut down to 500 persons.

In the case of the Little Red Stickers, 10, 20, even a hundred persons will read each one stuck up in public places. One hundred thousand readers for each thousand red stickers put up is not too large an estimate, because each one in place has a long lease of life, while the newspaper is old in a week, for a country paper, and in a day for a city daily.

Be sociable. Buy at least 1000 Little Red Stickers and put them up. Others will be doing it for you, and *it will pay*. Now, while the red stickers are all right for *national* and world-wide advertising it is not the *local* thing we want. That is the complaint I have had, in scores of letters. Therefore, I offer you the result of my later study, as follows:

**EAT BONNEY
HONEY**

Let this, like the Little Red Stickers, be in red ink, and while I first used "Bonney Honey" on account of the rhythm, I had decided that Jones honey or Dadant honey, or even Katzenhammer honey is just as good a name as Bonney honey *for your individual locality and use*. You need nothing more there, and for 20 or 40 miles around, but when you begin to branch out add your name and address. I have before me as I write, a letter from the editor of the Policeman's Monthly, a magazine published in New York city, and in it he says: "I have read so much about Bonney honey that I feel I *must* taste it. Would it be possible to send a jar to me, a quart or so, and enclose bill for same?" He had seen

**EAT BONNEY
HONEY**

stamped on the envelopes I used in which to send stories to the publication. I have received orders from mail clerks, and they came addressed,

**EAT BONNEY
HONEY**

Buck Grove, Iowa."

This is a good, cheap, efficient and persistent form of advertising. You may think possibly that a constant reading by the people around you of a red sticker will not have the desired effect. Perhaps they will not call you out of bed at 2:00 a.m. to tell you they saw one, but, like myself, you will find it the constant advertising drop that wears away the stone.

As to the cost, the initial expense will be about $2.00 for drawing and zinc etching, and a matter of 25 to 35 cents each for electrotyes. Say $3.00 to $5.00 for the first thousand. After that they can be printed and gummed for about 40 to 50 cents a thousand. In addition you have the electrotypes to use on letter heads and other things. Were I producing section honey I'd have every section printed

**EAT BONNEY
HONEY**

This could be done with a rubber stamp in carmine ink, or on one side where scraping need not disturb it before the section is put together.

I might mention that I find it pays for me to sign many of my letters

EAT BONNEY HONEY,
Buck Grove, Iowa.

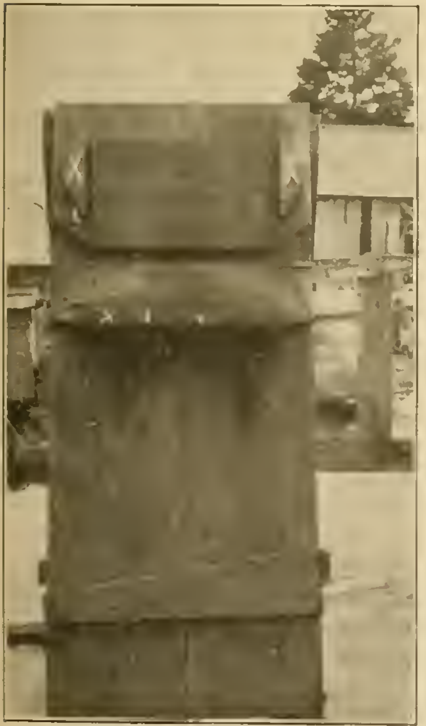
Frame—Nailing Devices

BY J. L. BYER.

WHILE no one will question the fact that beekeeping in common with other pursuits is making, and has been making progress, some of the so-called new inventions are either not new or are not as good as some methods that were practiced many years ago. This is particularly true in regard to devices for holding frames for nailing, in a solid position, and at the same time permitting accurate and rapid work.

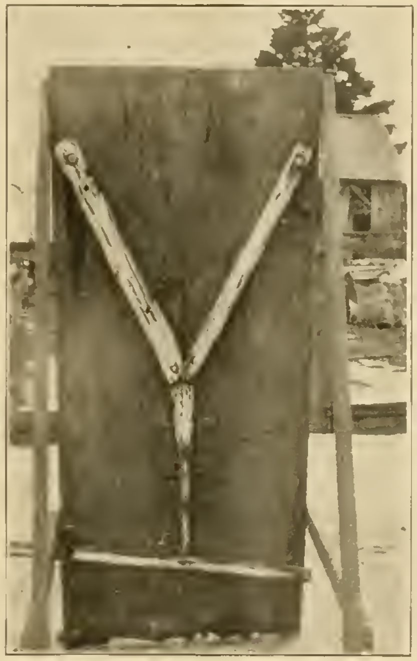
At our last convention a good friend of mine illustrated by actual practice a device put out by a well known author in the United States. The method, while practical enough in so far as being able to do the job, was nevertheless almost universally condemned by those present as being too intricate and slow a process to justify its use when simpler methods would do the work quicker and with less trouble.

The illustrations herewith given, are taken from photographs of a device made by my great uncle, deceased some 20 years. It was made by him over 40 years ago, and is still giving good service in the hands of a son-in-law. We use a similar one, but of much neater construction, made by my grandfather about the same time, but as mine happened to be stored away for the winter in an upper room of an out-building, I walked a half mile and took a picture of the machine shown. As will be seen by the illustrations, the device is made of inch lumber and stands on four ends in an upright position, the legs on each side being about 3 feet apart at the bottom while they join at the top. These supports are of strips 1 inch by 2, but can be made as strong as desired. When built, the device is high enough to admit of a man standing in front and working in a comfortable position. No. 1 shows front view. The square block at the top should be the exact size of the frame to be nailed up, and is simply an inch board nailed fast to the front frame, which consists of inch lumber.



FRONT VIEW, DEVICE FOR HOLDING FRAMES FOR NAILING

In placing in frame for nailing, the top-bar is laid flat in space between this block and board beneath, the end-bars are put in place, and the bottom-bar is also put in position on top of this block. The foot lever, projecting at right side of the machine, shown near bottom, is first raised with the foot to allow pieces of frame to be placed as described. Once in place, the lever is jammed down with the foot, and the small blocks marked with a cross move down and firmly hold frame on the square while nailing is done. Small crosses lower down indicate nail box, with various nails required, there being three compartments in the one illustrated.



REAR VIEW, DEVICE FOR HOLDING FRAMES ON THE SQUARE FOR NAILING

A glance at the rear view of the device, shows the construction which is very simple. The two pieces at the top are fastened to the small blocks marked with a cross on the opposite side, with wooden pins. They connect at the bottom with upright made, in this case, of a heavy piece of corrugated iron. The way it is fastened to the foot lever is easily seen, and any one with a few rough pieces of lumber and the tools ordinarily found around any work shop, could construct a similar machine in a half day at the most.

If the front block at the top is made exactly on the square, and is the correct size of the frame, the nailed frame will be exactly square even if nailed by the greenest operator. This is one of the great advantages of this simple arrangement, in that unskilled labor can be employed and at the same time accurate work will be accomplished. As to quick work, it is surprising how large a number of completed frames can be turned out by a quick mover in a very short time. With slight variations, this machine may be constructed so as to allow the operator to be seated while at work, and in no way interfere with its efficiency. I have seen a good many devices for holding frames to be nailed, but we must yet see something better than ever, before abandoning our "old reliable."

Markham, Ont.

A Letter from Canada

BY MORLEY PETTIT.

I THINK I find every number of the American Bee Journal a little bit better than the last. The May number, which has just come to hand, is particularly interesting. I feel like making a few comments upon some of its features. After admiring the beautiful cover picture of blossoms on which unfortunately I could not discover any bees working, the next thing that attracted my attention was Dr. Miller's editorial on "Beekeeping in Canada."

We are finding again this first week of May, the value of the extra protection which outdoor wintered bees have during the spring, or which is given to bees taken from the cellar according to our experiment, No. 4. During the latter part of April we had temperatures ranging between 80 and 90 degrees for several days. With plenty of stores, plenty of pollen and some honey coming in, it will easily be seen how the brood-nest would be expanded under those conditions of temperature. There was then a sudden drop of 20 to 30 degrees, followed by a decline of the thermometer until a few nights we were afraid of frost, and frosty nights are almost certain to come between now and settled warm weather.

Of course, cellar-wintered bees were all out on the summer stands some time before this hot weather came, and when one drives through the country and sees these colonies in single-walled hives with frequently just a thin board cover, standing out in exposed places, one does not need to be a prophet to know how the brood is suffering and what a set-back those colonies are getting. On the other hand, colonies which are warmly packed would not feel the cold so much at the present time. In other words, the packing prevents the extreme changes and allows the steady and fairly rapid development of the colonies under the extremes of temperature to which they are subject in this country.

In reply to Dr. Miller's last paragraph, where he wonders if Mr. Pettit would make his affidavit that among the 2846 colonies reported black bees there are 100 sure enough simon-pure blacks. I think there would be a few hundred that were quite innocent of any Italian blood, although probably not all of the 2846. One thing sure, and that is that there are not nearly as many black bees as there were before European foulbrood came along.

Wesley Foster usually says wisely, and when he proposes an apiarists' clearing house, he is up to his usual standard. I have found it necessary to act in that capacity more or less ever since becoming Provincial Apiarist of Ontario. Those who wish help write to me and those who wish employment, and sometimes I have been able to get the two together. We are also developing at the Ontario Agricultural College a civil service school in beekeeping, as it were, in so far as that term might be applied to our regular and short course students. About 15 colleges in the United States and two in Canada are now getting instruction in beekeeping. As these courses develop and receive the encouragement of beekeepers a constant supply of assistants and managers should be available in the different States and Provinces. I do not quite see how this work of examining and training could be undertaken by an association as such.

Guelph, Ont., May 6.

A New Sweet Clover

BY FRANK C. PELLETT.

PROF. N. E. HANSEN, of the South Dakota State Agricultural College, who has made four trips to Siberia in search of plants suited to the dry uplands of western South Dakota, is now offering for trial in that State a few plants raised from seed which he gathered near Semipalatinsk in 1913. Prof. Hansen has made a number of journeys in the capacity of agricultural explorer, and has introduced a number of things which are proving to be valuable acquisitions.

The two forms of sweet clover already widely introduced in this country are *Melilotus alba*, the white form which is now coming into favor as a forage plant, and *Melilotus officinalis*, the yellow kind which is generally regarded as inferior to the white form. In "Plant Life of Alabama," I find that that there is also another kind, *Melilotus indica* which comes from the warmer parts of Europe, and which not only occurs in Alabama, but is also naturalized in South Carolina, Florida and Mississippi. This is said to be a small flowered annual, also of a yellow color.

The plant lately introduced by Prof. Hansen is *Melilotus dentatus*, and is described as "A tall yellow-flowered sweet clover from the Semipalatinsk region. Seeds very large, stems red tinted. Preliminary feeding tests at the Imperial Agricultural College at Moscow, Russia, indicate that the cattle prefer it to the common sweet clover." It is also said to be superior as a pasture plant in that it is less odorous.

Beekeepers living in South Dakota should get into touch with Prof. Hansen and give this new and promising plant a trial. It is to be hoped that a supply will soon be available to those of us who live in other States as well.

There is so much interest in sweet clover among farmers generally that beekeepers will now find it easy to get a really valuable new kind of this plant introduced widely.

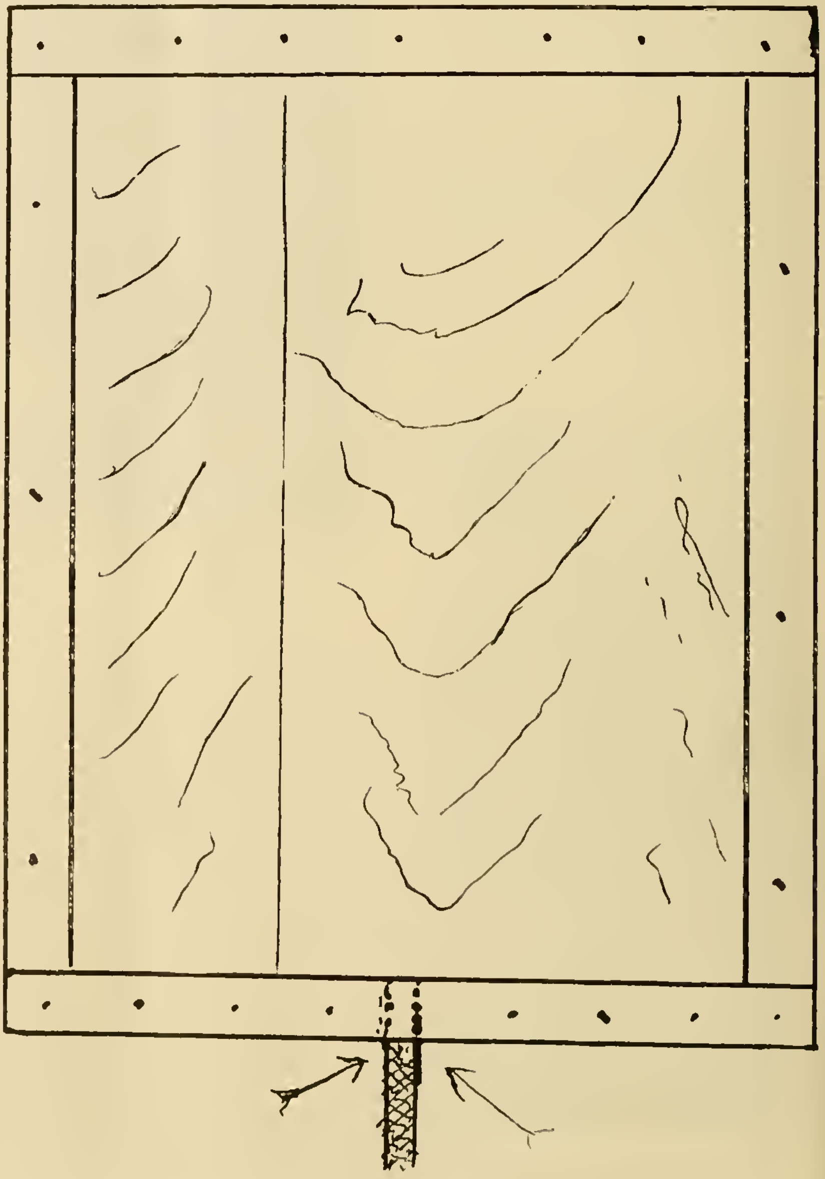
Atlantic, Iowa.

A Cheap Bee Escape

BY J. E. CRANE.

ASIDE from the invention of the movable comb hive, there are few improvements in beekeeping that have given us greater pleasure or enjoyment than the "bee-escape." As we take up the subject, our mind reverts to the methods formerly used to get the bees out of the supers. If we go back 50 years the favorite method was to take off the boxes, as they were then called, and place them in a darkened cellar with a small opening in the window for the bees to fly out, and one man told me how, when he went to get his well filled boxes, the "pesky bees" had robbed them and he had only empty combs for his pains. Another told me of his equally sad experience in placing his surplus in his wood room and leaving the windows up "just a little." "You wouldn't have thought of it would you?"

Moses Quinby recommended placing supers in a box and covering with cotton sheets and then turning them frequently, allowing the bees on the turned-up side of the sheet to fly away while another lot collected on the underside again. This method worked very well if honey was coming in or the bees in the super were well filled with honey, but if otherwise the bees as they left would not unfrequently break the cappings and take a load home with them, sometimes to such an extent as to render many combs unsightly, if in glass boxes. With the advent of supers of sections it has been an easy matter to blow smoke down between the sections and drive a large part of the bees out at once, and then with our large dry goods boxes to put our supers in and cover with cotton, we could easily get rid of the rest. But



J. E. CRANE'S ESCAPE BOARD

even then, at the close of the honey harvest, we would find more or less broken cappings and more or less honey removed.

Then visions arise of taking off honey at our out-yards, and out of the boxes and into the house, and scraping the bits of wax off the supers, and the oft-repeated circus of loading the honey and hitching the horse to the wagon and getting started for home. The bees having taken a load of honey as they left the supers and carried it to their hives are "stirred up," and come back determined to leave no stone unturned or crack unnoticed that promised another load, and because they did not find it they did not fail to give us their opinion of such doings.

With a good supply of bee-escapes all this is changed. When our honey is ready to come off, we may now take a lot of escapes, go to the yard and slip them under as many supers as needed to make a good load, and perhaps on our way home do the same in another yard. In a day or two we can take these supers off, slip the escapes under another lot of supers, load up our honey after scraping off any wax from the underside, and leave without the bees hardly knowing what has happened.

What a change! And the old dry goods boxes lie unused, and it is as easy now to go to an out-yard and get a load of honey as to go into the fields to get a load of hay, and not much more danger of getting stung if we are careful; and all comes from the use of "bee-escapes." But not all improvements are perfect at first. The first steam locomotive was a plaything compared to our modern engines. We had bee-escapes before the "Porter" was brought out, but they were crude compared to this popular escape. That it is not quite perfect seems evident since we often find the bees slow in leaving the super.

Mr. Geo. A. Boyum, in the American Bee Journal for August, 1914, suggests an improvement that is supposed to hasten the pace of the bees leaving the super, which may prove of some value. Permit me to introduce to the readers of the American Bee Journal another bee-escape, gotten up by a friend of mine, that is even simpler and cheaper, and I believe will work more satisfactorily. I enclose a draft of it that it may be more easily understood. It is little more than a specially constructed honey-board and can be used as a honey-board or escape at the will of the bee-master. In fact, my friend uses it on his hives nearly the year around as a honey-board.

It is a board with a rim one inch deep and 1⅞ inches thick, forming a a shallow box one inch deep, the size of the top of the brood chamber. Through one end of this rim a ⅜-inch hole is bored with a bit, and a piece of wire-cloth that has been rolled around a lead pencil or other ¼-inch roll, inserted into the hole, and we have a complete bee-escape. The wire-cloth roll should be 3-inches long. When used as a honey-board pull out the wire tube and insert in its place a little wad of paper or cotton, or a cork, and you have the best kind of a honey-board. When covered by a telescopic cover, which all single-walled hives should have, it forms a dead-air space on top of the brood-chamber, protecting it from the cold of winter and early spring, or the excessive heat of midsummer. There are other uses to which it can be put, but I will not mention them at this time.

As an escape, after a super is placed over it, there is no passage to the brood-chamber or odor coming up through it to the bees in the super. The wire tube lets in some light when the bees are not passing out through it, so they recognize at once the exit and pile out about as fast as they can when once they realize their isolated condition. It might be thought that there is danger of the bees coming back and entering the super, but they do not, as the small size of the tube and sharp ends of the wire make it very difficult if not impossible to enter through it; so they content themselves in trying to get in at the base of the tube where the arrows are shown.

Middlebury, Vt.

The Charm of an English Apiary

BY A. H. BOWEN.

THE Cotswold Hills of sunny Gloucestershire are noted for something else beside their villages of Gothic quaintness, the upland scenery and the trout streams—they are noted for bees and honey.

It is bee-hives everywhere. They are kept in old-fashioned gardens amongst the rosemary and wild thyme—quaint straw skeps bound by a wooden hoop or two; and you come across them in large apiaries of a hundred colonies or more, surrounded by rolling fields of purple sainfoin, of yellow charlock, and the unpretentious white clover, from which the bees gather so much. Usually they are found in the shelter of a wood, so that the blasts of winter are tempered, and the bees can sleep in warmth and quietness.

From the windows of the honey-house you can look out at the hives stretching away like long white lines in the distance, and at no time of the year do they look better than when tiered with the heavily laden supers.

Every month from spring onward brings its work in the Cotswold apiary. The first examination of the year is a particularly interesting one. On arrival the smoker is primed from a box of decayed wood, and veils are put on; for the examination of the hives may entail some stings before it is over. The brood-nests are examined to see if the queen is all right and food plentiful, clean floor boards are substituted for soiled ones, and new hives for those that are leaky, or in need of repairs.

Then comes the time for adding the supers, and the long, hot June days when the bees begin to swarm, and you have many a climb among the branches of the sycamore tree, reclaiming those that lodged higher than the rest. During the height of the season work is often carried into the night; the extracting of honey goes on merrily within the honey house.

The charm of Cotswold apiary is in its quietness, its peacefulness, when the bees and birds revel in the sweet summer sunshine; and the bee-master himself may enjoy the wealth and beauty of nature's glorious handiwork.

Cheltenham, England.

Alfalfa in Italy

BY D. BARONE.

WITH growing interest I am reading "Notes from Abroad," as perhaps do all the readers of the American Bee Journal. Nothing worthy of remark was unobserved by the editor's scrutinizing eyes. So the smallest act of dutiful hospitality by the European beekeepers had echo in your mind.

"What a pleasure it is to find so hearty a welcome! The Italians are hospitable." I, Italian by birth, mind and hearth, know how much truth is in your words. I hope many will follow your example when the calm takes the place of the hurricane, which, by its

A COTTAGER'S APIARY IN GLOUCESTERSHIRE, ENGLAND rage, threatens now to ruin the wise and patient work of centuries. By becoming better acquainted, we shall learn then to admire and esteem each other, with advantage to our industry.

Permit me to give shortly to the American beekeepers more accurate information about the three principal honey sources of Italy, to which you refer in the March number.

The three plants in order of importance from the viewpoint of beekeeping, are the *sulla*, the *lupinella*, the *erba medica*. The sulla (*Hedysarum coronarium*—don't confuse it with the sainfoin), with its flowers bright purple colored, wants strictly a clay soil. It is a hay plant of first-class, and holds first place in yielding honey. It grows rankly and spontaneously in central, meridional Italy and in Sicily. If I am not mistaken, it does not withstand very well temperatures below —5 centigrades (23 degrees F.). The *lupinella* or *crocetta* (*Onobrychis sativa*) is nothing more than the esparcet or sainfoin, and not "a variety of the lupine," as you say. (In gathering your notes you fell unwittingly into error.)

Its flowers are rosy-colored, and it is the best regenerator of poor and exhausted land, especially sandy, though it seems to accommodate itself to every kind of soil. It is less exigent than the sulla, and better supports low temperatures. Both blossom during June, and yield one cut only, yearly, of excellent hay, and sometimes in rainy summers a second one, but much inferior to the first. From this very best hay splendid results are attained in fatting cattle, especially if mixed with alfalfa hay.

On the other hand, in the interest of the beekeeper, I add without the least shadow of exaggeration, that conditions being favorable, the finest honey harvested from the bloom of these two valuable hay plants averages 200 pounds and more per colony.

Why can we not grow them in this country? If memory does not betray me, six or seven years ago, Mr. Frank Benton, during his trip through Italy, was offered seeds of sulla from members of the Federation Apistica Italiana.

Did Mr. Benton experiment with them? And if so, what result did he get? Last year, just near Harper's Ferry, Iowa, I saw growing in poor sandy land, alfalfa phthisical and stunted. Doubtless the test there was negative. Why not introduce at least the lupinella where the alfalfa gave so poor results? I think the substitution would be doubly profitable, to the farmers and the beekeepers. The first would certainly better their worthless land, and would at the same time give appetizing hay. The latter would add to the clover one more very rich source of honey.

I will say nothing about the *erba medica* (*Medicago sativa*). It is nothing more than the alfalfa. In passing let me recall a circumstance worthy of note. The alfalfa was introduced into Italy not many years ago, and because of its undoubted value it is grown now all over the peninsula. During the first years it was of no aid to the beekeepers. Its bloom did not yield honey at all. A few years since, however, it was noted that the bees were going oftener on its flowers, and in some regions with encouraging results.

Why?

These three hay plants, the champions of the leguminous, receive the best care from the Italian farmers. Indeed, they owe to them not only the regeneration of their fields, exhausted by a culture of many centuries, but the development of the cattle industry, wonderfully growing year by year. They employ them for rotation, restoring the nitrogen to the soil. One year wheat, one year corn, two years one of the hay plants.

New York, N. Y.

[In the description of the hedysarum, we were led astray by the Larousse Dictionary and the Bonnier "Nouvelle Flore." Both range this plant under the popular name of sainfoin. Larousse calls the sulla "sainfoin à bouquets." Many thanks for the correction.—Ed.]

No. 6.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(*Photographs by the author.*)

A LOCATION that furnishes an abundance of early pollen, and some nectar for spring brood-rearing, is greatly to be desired. If the beekeeper finds it necessary to resort to meal or similar substitutes for pollen, he is at a great disadvantage, to say the least. During my early experience I was much puzzled by the discussions of the various substitutes for pollen, for in my locality there is natural pollen to be had almost as soon as the days are warm enough for the bees to fly, in spring. This season, the bees only had about two good flights, ahead

PART OF A COTSWOLD OUT-APIARY

of the day on which they began to bring pollen to the hive. The spring was very late, and Easter Sunday was the first really warm day we had.

On visiting the hives, I found that the bees were bringing in pollen, and on investigation found the soft maples in bloom. Barring killing frost or other extraordinary condition there will be hardly a day from the first warm days of spring until the freezing weather of October or November, when natural pollen is not to be had. While the honey flows are of the greatest importance, the sources of pollen are not to be ignored, especially in spring.'

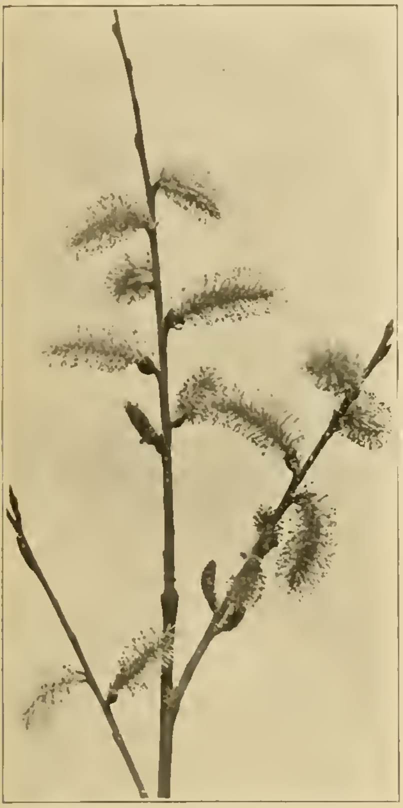


FIG. 23.—PUSSY WILLOW BLOOM

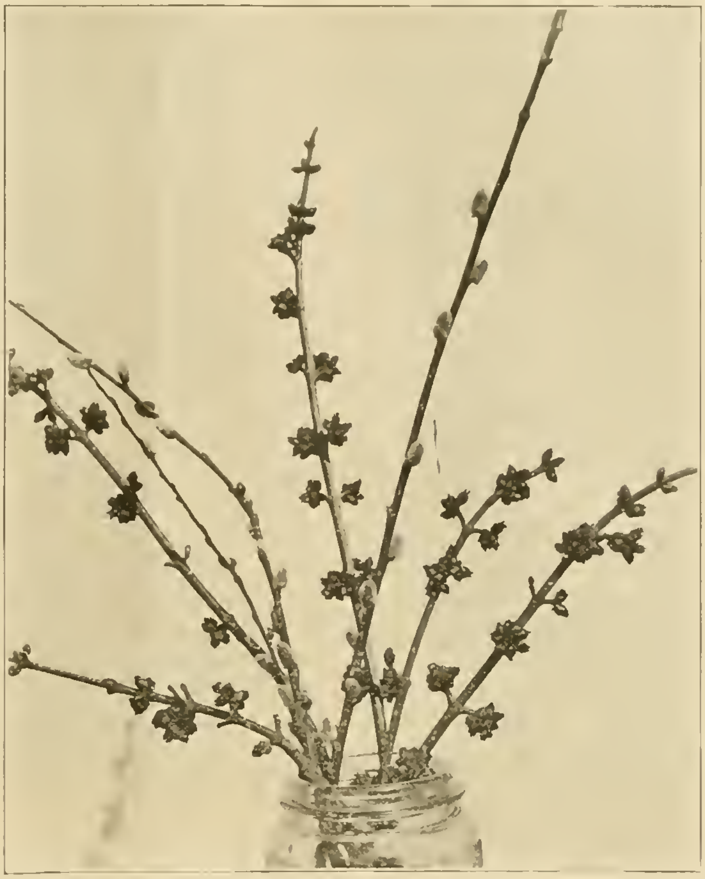


FIG. 24.—AN EASTER SUNDAY BOUQUET OF PUSSY WILLOW AND SOFT MAPLE

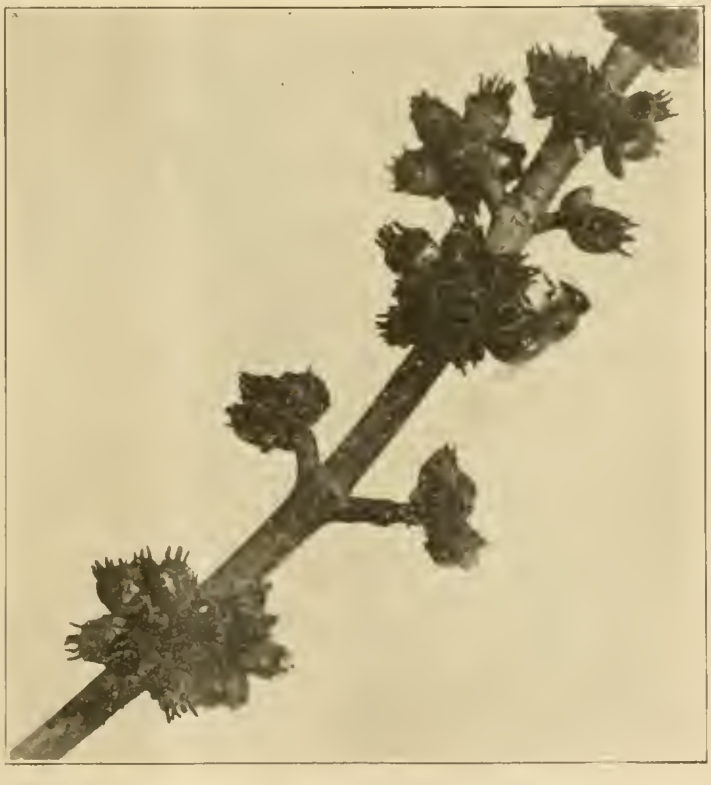


FIG. 25.—HONEY BEE ON MAPLE BLOSSOMS

WILLOW.

In the northern States the blooming of the pussy willow (*Salix discolor*) is among the first signs of spring. It is a small tree growing along streams and on wet lands. Furnishing as it does about the first honey of the season, as well as pollen in abundance, it is highly regarded by the beekeepers.

There are about 160 species of willows, mostly confined to the cooler and temperate regions of North America. Some species extend their range into the arctic regions, where the vegetation is sparse. While the number of varieties is not so great in the southern States, it is regarded as valuable in the Gulf States and in California. As an example of the comparative abundance of willows North and South, it may be mentioned that four species are recorded for Alabama and 18 for Connecticut. The willows bloom too early in spring in the northern States for the bees to store surplus from this source, but both nectar and pollen are supplied for early brood-rearing.

In "Richter's Honey Plants of California," I find reference to numerous localities where surplus has been secured from the willows. It is said to be "a dark amber and bitter honey." In a few other southern localities surplus yields from willow are reported. The flowers on one tree will be staminate and on another pistillate. Unlike most plants the organs of both sexes are not found on the same plant.

MAPLES (*Acer*).

Almost all of the early pollen and nectar comes from trees, and most of the trees bloom early. The maples are mostly large trees confined to North America and temperate regions of the old world. Two species are commonly planted for shade and ornament; the sugar maple or hard maple, *Acer saccharinum*, and the red maple or soft maple, *Acer rubrum*. The photographs show the blossoms of the soft maple.

Maple lumber is commonly used in the manufacture of furniture, flooring and finishings. The blossoms come very early, when especially valuable in building up the colonies for the main honey flow. If the bees were as numerous as later the nectar stored from maple blossoms would make a creditable yield. Mr. C. L. Pinney, of Iowa, reports that one year his scale hive showed a gain of from one to two pounds daily from soft maple, when the ground was still covered with snow.

If it were possible to have colonies come through the winter with as many bees as they have at the beginning of winter, beekeeping would be a bonanza. Instead of having one or two flows, there would be first a flow from maple and willow followed by one from dandelion and fruit bloom, ahead of the big clover flow. However, the beekeeper whose apiary is situated near plenty of such trees as willow, maple elm and box-elder is fortunate indeed, for the bees get a splendid stimulation very early, and should be in prime condition for business when clover comes on.

BOX-ELDER (*Negundo aceroides* or *Acer negundo*).

The box-elder or ash-leaved maple is a near relative of the maples, and is sometimes included with them. Fig. 26 shows the staminate blossoms of box-elder. Like the willows, the stamens are borne on one plant and the pistils on another.

The box-elder is found from New England and southern Canada west to Dakota and southward. It is also common in California. Apparently its range does not extend as far southward as other maples. It is very commonly planted for windbreaks and shade in the prairie States of the central West. Some honey is yielded by the blossoms and honey-dew is often secreted by aphis feeding on the leaves. While not generally regarded as especially valuable, its season is such that its addition to the honey-producing flora is important. The blooms come very soon after soft maple in April.

ELM (*Ulmus*).

The elms are very attractive to the bees for pollen. The American or white elm is more especially valuable, and a large tree will attract so many bees that the humming sounds like a swarm. Our illustration shows the bloom of the red elm (*U. fulva*), also called slippery elm.

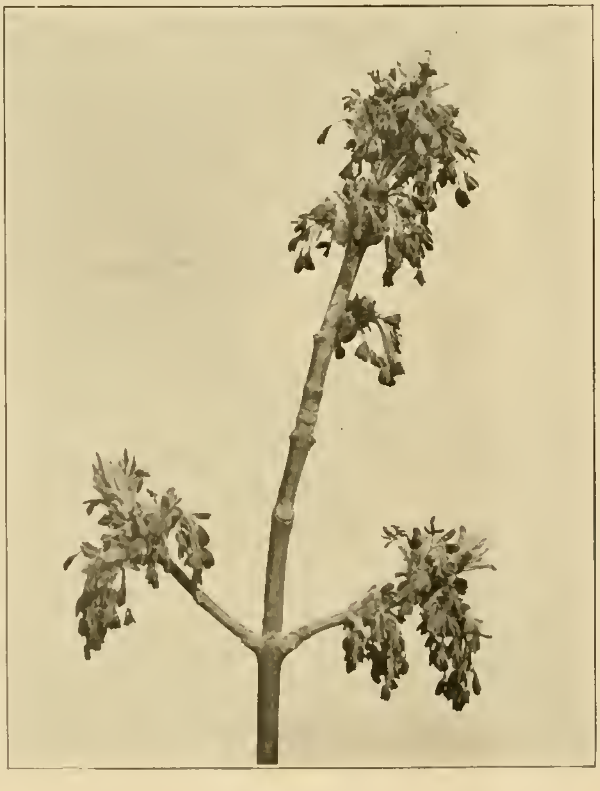


FIG. 26.—STAMINATE BLOSSOMS OF BOX ELDER

HAZELNUT.

The hazelnut (*Corylus americana*) is a slender growing shrub common in the borders of woodlands of the most of the temperate North America. It yields some pollen and is valuable where there is a scarcity of early pollen-bearing plants. The figure shows the male blossoms which are more conspicuous than the fertile ones.

Atlantic, Iowa.

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Preventing Swarming—Making Increase

BY E. F. ATWATER.

IN many localities conditions are so favorable for swarming that even with the production of extracted honey a vast amount of work must be done to prevent it. Such is the case in Mr. Holtermann's location in Ontario, Canada, and certainly such is the case with us.

We are all looking for a sure and easy way to hold the bees together without sulking or swarming. But all plans used require an amount of labor that cuts heavily into the season's income, and all do very greatly limit the number of colonies and apiaries which can be successfully operated.

In the American Bee Journal for 1914, page 310-11, Mr. C. F. Greening asserts that "by always keeping some brood unhatched in the top super, as long as there is any space below that super in the hive proper, your bees will not swarm." If this be true in many localities, I would regard it as one of the most important and revolutionary discoveries in modern beekeeping.

The inference is that examination of brood-nests will be unnecessary, and nothing is said about destroying cells that may be started on that frame of brood, after putting it above. Nothing is said as to the use or non use of an excluder, and if not used, and the flow is not very heavy, many queens will establish their brood-nests above—a very undesirable condition.

Where this frame of brood is in a third or fourth story, above an excluder, we have had many a queen reared and mated there, by allowing a small entrance to the upper story, with no swarming. But if the mere presence of that frame of brood with empty comb below is a sure prevention, the writer wants to know it.

We hope that others with an extensive experience will deny or confirm Mr. Greening's claims, for if the plan is to be relied upon, it can save thousands of dollars to our beekeepers this coming season.

In Mr. Hand's article, page 129-30 of the American Bee Journal for 1914, entitled, "The Migratory System *vs.* the Convertible Hive System," he shows us how to treble the number of colonies without the expense of a trip to Florida or California.

Let us look into his system, as it may be valuable.

First, he places five frames of brood and honey, and the queen, in one end

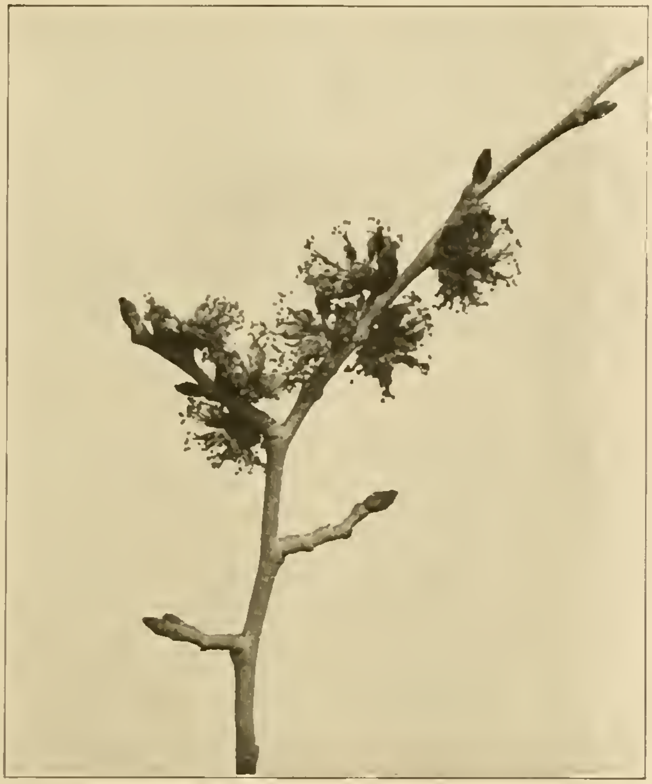


FIG. 27.—ELM BLOSSOM

of the hive, separating them with a tight-fitting division-board. Right here the writer often does something similar, so will tell a good way to effect this separation. Saw grooves ⅛ inch deep, in which a tin division-board may be slipped, or a queen-excluding division-board as required. A strip, ⅜ inch square by 19 and 1-16 inch long, makes the top-bar of the tin division-board. Such a division-board occupies almost no room, and readily gives free communication of heat by conduction and radiation.

But Mr. Hand, starting his cells at such a late date, in this locality would lose out compared to our plan. If we cannot have the laying queens ready from a few days to three weeks before our first flow, then we buy them. Each layer that we can establish in a good 2 or 3 frame nucleus before our flow, will, with but little help, soon build up to a strong colony, then if our second flow is good they will gather quite a crop, while if we waited to utilize cells of our own starting, say June 1, it would be 11 days before our virgins emerged, 8 to 10 days more before they lay, and 21 days more before their bees hatched. Such nuclei, as a rule, do well if they get winter stores.

All the dividing of full colonies done by Mr. Hand, and waiting for the queens to mate and lay, constitute a great handicap to his colonies.

The writer must confess that he has been compelled to make a great deal of such late and unprofitable increase, owing to non-arrival of ordered queens. I fear that there are few localities in which eight combs of brood may be taken from parent colonies after they have already had several combs taken from each. In any event such vast production of brood after the opening of or during the flow, must reduce the crop from that flow.

We have taken 40 rather poor colonies in boxes, kegs, and odd-sized hives, transferred all and secured nearly 200 percent increase, and taken enough honey to cover the cost of the original 40, but without the increase, would have had double the honey. If our second flow had been heavy, we might have had a large crop.

The plan of "springing" two colonies in one hive is good, though not new, and will, if our experiments indicate anything, give more early brood, from each queen than any other plan, as the other colony just beyond that division-board will keep the division-board brood as warm as a summer day, so that each colony virtually has a furnace-heated wall on one side, but if this plan is adopted you lose all spontaneous prevention of swarming, as the space occupied by each colony is small, and conditions unusually favorable for breeding.

When the old Quaker had pounded his thumb, and his wife happened out, he cried, "Go back into the house, Mandy, I'm feared I'm about to express myself." So after giving a little criticism of Mr. Hand's methods, we will give a hint of our own.

Here early increase is the profitable increase the same season.

Get laying queens at any time from the opening of the flow to three weeks previous; make a nucleus of two frames of brood and bees from each strong colony, shake in front as many more bees, so there is no need to confine them, as the old bees go back while the young ones remain.

Give each nucleus a queen, then as forward colonies get strong give a frame of hatching brood or a shake of bees to each nucleus. A few "shook swarms" when the flow arrives will furnish brood to fill out any that are weak.

Now the rush is on, no time for building up a lot of nuclei, so we make our increase, either by the Coggshall or Hutchinson plan. When bees are flying freely, jerk a frame of brood out of each strong colony. Shake the bees in front of or into their old hive. When you have six to ten such frames of brood, then move aside a good colony, into its place put the new hive with the six to ten frames of brood, give them a queen, and if the flow is good put on a super of combs.

The above is the Coggshall plan.

With the Hutchinson-Coggshall plan put your six to ten frames of beeless brood above the excluder on a strong colony. Then in a few hours, or better, about five or six days, set off this body of brood and young bees on a new stand, destroy cells if any and give a queen. Either of these two plans is as far superior to the tedious and laborious colony-depleting methods advocated by some as could well be. No hunting for queens in a busy time, no serious depletion of any colony, and ready for some super work at once. Then no "building up" with tedious manipulation, but good colonies will give a good accout of themselves.

Meridian, Idaho.

How I Produce Extracted Honey

BY A. P. RAYMOND.

(Read at the Wisconsin State Meeting.)

I AM requested to give my method of producing extracted honey. I have not made any important discoveries along this line. I simply put in practice the discoveries of others which I have gleaned from reading the various publications relating to the subject of beekeeping.

I first endeavor, as soon as my bees are on the summer stands, to give them what aid I can in rearing young bees, and getting all colonies as strong as possible and as early as possible. In doing this I have entirely discarded the plan formerly practiced by many, of taking brood and bees from the stronger and giving to the weaker colonies. I believe a frame of brood and bees is worth as much in the hive where I find it as it will be when moved to another and weaker one; besides, I save a large amount of useless labor.

The weaker colonies are stimulated by regular feeding at times when there is no honey coming in from the fields. For feeders for this purpose I use a cigar-box worked over into a miniature Miller feeder. I cut an aperture ½-inch wide and as long as the feeder in the enamel cloth, which I use on all my hives in summer, and place the little feeder directly over this, pour in the feed, and place the telescope cover over all. I think feeding in this way, that is, placing the feed directly over the cluster, the most effective of any;

even the weakest colony will remove the food in the coolest weather. About the time the strong colonies are likely to prepare to swarm, I place on top a super which is an exact duplicate of the hive-body filled with empty combs, making a 2-story hive and using no queen-excluder.

The queen and bees now have free access to both the super and the original hive-body in which to rear brood. Just at the time clover bloom appears, I raise both of these bodies up and place another body underneath, which is filled with empty comb or foundation. I place the queen and a frame of comb containing a little unsealed brood in this body with an excluder on top, and the other two bodies on top of all, and now we have a colony that in all probability will not swarm during the honey-flow. If we can succeed in getting strong colonies in time for the honey-flow, and then prevent swarming, the honey crop will be forthcoming provided the flowers yield any, which I am sorry to say is not always the case. I keep close watch and provide more super room as needed, placing the empty ones directly over the one which has the queen, and raising the others above.

Fig. 28.—Hazlenut Blossoms

I would never think of getting along without queen-excluders, nor would I attempt to remove honey without bee-escapes. In one week after placing the queen under the excluder, I examine the two bodies raised above and remove all queen-cells. This prevents the presence of drone-laying queens, which prove to be such a nuisance.

I suppose I will be the first to register a disapproval of the steam uncapping knife. I used it one season, and my honey from cappings, which was formerly the very best, using the old knife, proved to be a lot of thin, dark colored unsalable honey, fit only to feed bees.

Extracting with me is done from the first to the middle of August, placing the combs back on the hives for fall flow, which, in my locality, we sometimes get.

Greenwood, Wis.

More About Mr. Mendleson's Apiary

BY B. BLACKBOURN.

I WAS very much interested in the account of Mr. Mendleson's apiary in your February number, and should like to ask a few questions. One glance at an apiary like his shows what the owner is. One never yet saw a well-kept apiary run by a bad beekeeper. A model apiary invariably means a keen beekeeper, and a keen beekeeper means a good one. Mr. Mendleson says that the grounds are kept clean. By this does he mean that the ground is kept clear of vegetation by hoeing, or that the vegetation is kept short by cutting with a scythe or mower?

The ideal bottom for an apiary is one over which I have given considerable thought. Grass is probably best all around, but the ground needs to be very level so as to facilitate cutting, and cutting in this moist climate needs to be done very frequently or the grass soon gets coarse and long. Then there is the question of keeping it down close to the hives where it cannot be cut with the mower. Over and over again have I seen salt recommended for this purpose, but my experiments along this line have proved it unsatisfactory, as the salt encourages the strong grasses and only kills the weak ones, the result being that one soon has great strong clumps close against the hives that are too thick to cut through with shears, while if they are pulled up great holes are left in the ground. After all this is what one would expect, as salt is used largely as a manure for pastures.

With regard to the galvanized iron honey tanks. How are they cleaned? also how ventilated? Does not the honey affect the iron? Our authorities always warn us not to use galvanized goods, as they say it affects the honey, but I notice that they are commonly used in America, and I have never read of any bad results. I should also like to know how such a large quantity of honey is strained.

Ramsgate, England.

[As this letter raises some interesting points, we have asked Mr. Mendleson to reply, for he is one of the most experienced beekeepers of the West. Our correspondent perhaps does not know that California is an exceedingly dry country where rains come only during the winter months.

In Illinois we have found coal cinders the best material to keep down the grass around the hives. The cinders make an ideal alighting place for the bees, as they are always dry.

Like Mr. Mendleson, we have found galvanized iron tanks satisfactory to keep honey for a few months. But for shipping, tin must be used. Mr. Mendleson replies as follows:—Editor.]

"The keeping down of weeds and grass in my apiaries has always been a matter of importance to me. It causes labor and expense to be avoided as much as possible. As I have peach trees among my hives for swarms to alight upon, and also intend to have grapevines for a system of trellis shade for the hot summer months—the grapes alone will pay for expense of hoeing and a profit—I must avoid damaging the soil by applications of salt or crude oil. So I am compelled to hoe down the weeds in early winter. Two or three times cutting thereafter with a scuffle hoe will do the work in this climate of California, as the surface of the soil dries out during the dry part of the season; then the weeds cannot sprout until the following wet season commences. So you see we have the advantage here over those having periodical rains to contend with. We generally have from five to six or more months of dry season.

"Concrete bases would be a great saving of time and labor, but that would make a big expense, although I believe it would pay, and I may try the concrete about a foot or more from the hives. In this warm, dry climate it is quite important to avoid fires, as many have lost fine apiaries from letting the weeds grow, which makes good kindling for a mountain fire. The advantages of a clean apiary are many; no obstructions, easy work, etc. I believe our work should be made cheerful, and cheerful surroundings cause pleasure. 'What is worth doing at all, is worth doing well,' and is in every way better in the long run.

"As to galvanized honey tanks for extracted honey, I have all my tanks cone-top with a manhole at the top and a ventilated lid. I can fill these tanks to the manhole, and it is easy to skim the honey, and after it is drawn off I put in a few pails of water to dissolve the thin coating of honey and wash out for the winter.

"The honey is not in the least affected by the galvanized iron, good ripe honey never works upon the iron, and the sun shining on these cone-top tanks causes the honey to get exceedingly thick and ropy. It is thin unripe honey that causes fermentation and eats off the galvanizing, and then the danger of arsenic poisoning. Any honey left in these tanks (after drawing off) would draw moisture during the wet season and cause fermentation and then damage."

A Swarm Saver

BY A. F. BONNEY.

I DO not expect the small minority of professional beekeepers who read this to be very much interested in my new idea, but to the thousands of beginners, amateurs, and those who keep so few colonies that they cannot be with them all the time to watch for swarms, I believe I am offering something of real utility. However, a few experienced beekeeper friends to whom I have shown it while incubating say: "It will have to be tried out."

Were I younger, or saw more money in it than I think I do, or were not so lazy, and busy, I might have the thing patented. As it is, I am going to give it to the beekeeping world, while realizing that things we do not have to pay a good price for are apt to be laughed at. If you are at all interested in the scientific aspect of beekeeping, or wish to know for sure if my invention will save time, labor and swarms, make one, or send to me for one, and give it a trial. Then report to your bee journal.

The instinct of a bee is to go up, also to the light, and on a screen or light of glass it would stay and starve, trying to escape; hence, the swarm "saver" which Mr. Alley patented years ago failed, for he wanted the queen to go sideways and the bees to follow her. Nor would they do as I plan were I to let them go into the brood-chamber by the usual entrance were it closed to them at the last hour. So I yield to their instinct to go up and to the light. Then I put the saver on a week or more before a swarm is expected. This may, of course, mean ten days or a month. When I say "I," I mean the experimenter. Don't be too critical.

Referring to cut No. 1:

A is the brood-chamber.
B, a super.
C, a super containing frames with foundation.
D, bottom-board.
E, cover.
F, swarm saver.
G, queen-excluding board, covering top of F.
H, queen-excluder over half of entrance of top super.
I, coarse wire screen to ventilate brood-chamber. This wire is put on when the swarm saver is, and must be covered a while until the bees get to coming and going by the way of the top of the swarm saver, which they will do, no doubt, in a short time. Then remove cover to give ventilation.

Cut No. 2 shows the course the queen and bees would take when they leave the brood-chamber. The bees would go out at J but the queen, when the bees swarmed, would follow the dotted path and find herself in C and restrained from going out by the excluder H. The bees returning would find her in C with a nice lot of frames and foundation, and would remain with her and go to housekeeping.

I might say to the greenhorn that when this condition is found to exist the proper thing to do is to attend to the swarm, shaking them in the good old way. If you do not know what this means go to the books or ask some beekeeper.

The cleats on A and B are required on account of the uneveness of the hives. It will be noted that the back of F is shorter than the front, leaving a ¾-inch opening at the bottom and 1½ inch space at the top, under G. The top of F comes but a little higher than the bottom of C.

Being very anxious to make this as valuable to the beekeeper as possible, I have asked Dr. Miller to give his opinion of it, and make such criticisms as he sees fit.

Buck Grove, Iowa.

[We have had swarm-catchers and self-hivers, but here's a swarm-*saver*. Rather a happy choice of name. Is it not, however, also a swarm promoter? For with the ordinary entrance closed will not the bees be pretty warm? Still, wire cloth is cheap, and abundant ventilation is easily planned. Moreover, the device is only used where swarming is expected anyhow.

There would be trouble to train the bees to use the higher entrance. Dr. Bonney says it is the "instinct of a bee to go up." Inside the hive, yes; outside it seems the other way. Rather than to go up two stories to find a new entrance, I should expect the bees to go to an adjoining hive, if the hives were in pairs. But there could be a hole half way up for the bees to use, to be closed after two or three days, thus training them by easy stages.

After this much is said it seems to be easy sailing until we come to the place where Dr. Bonney says the bees would remain with the queen and go to housekeeping. Would they? Dr. Bonney is reliable enough, but in an untried matter of this kind I'd rather take the bees' word than his. This is the crucial question. Until an answer is obtained from the bees I should lean to the belief that Dr. Bonney has made a correct guess.

Then when the swarm is safely housed in the upper story, the greenhorn is advised to shake the swarm. Out upon you, Doctor. In that case all the "saver" would do would be to save the queen, and I'd just as soon save her with an ordinary entrance trap. Unless there's something in the case that I don't understand (and there is always that possibility), there is an easier and a better way than shaking a swarm, one that can be carried out by a beginner who has never opened a hive, and even with box-hives.

Two days after the swarm has entered its new quarters put a super over it; five days later still, or a week after the issuing of the swarm, remove the

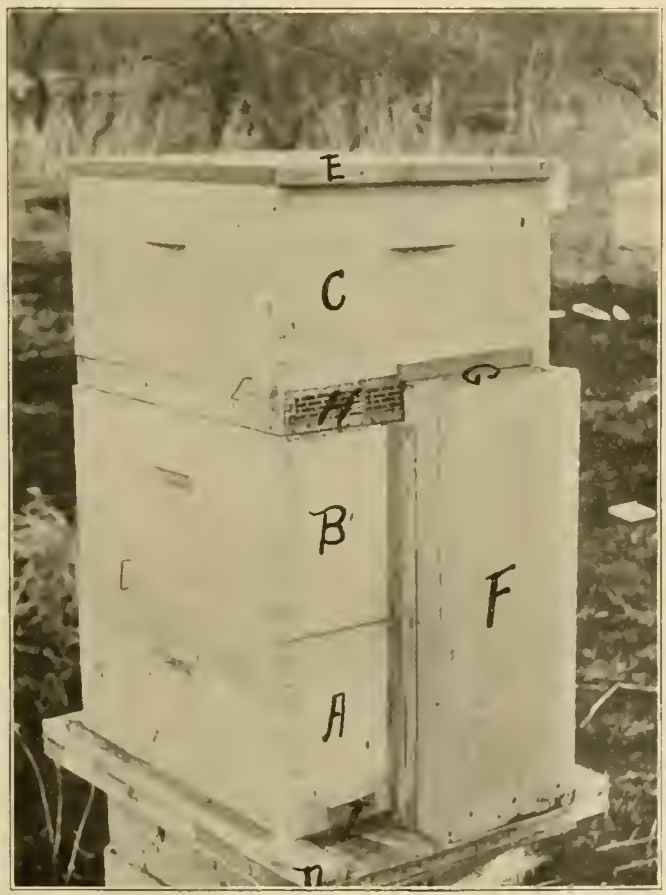


FIG. 1.—DR. BONNEY'S SWARM SAVER ATTACHED PROPERLY TO THE HIVE

old hive to a new stand, 6, 10, or more feet distant, and leave the swarm on the old stand, of course without the "saver." That's all; the bees will do the rest, and there will be no after-swarm. There will be no trouble about the bees going down to find the new entrance; I've tried it often.

This will be easier than any case of hiving a natural swarm in the old way, and immensely easier than some cases; and for one who wants natural swarms without watching for them, assuming that the swarm will make itself at home above, this device would seem a thing greatly to be desired.—C. C. M.]

Progressive vs. Box-hive Bee-Keeping in Cuba

BY D. W. MILLAR.

THE following letter from Mr. F. E. Kezar is liable to be misunderstood, and I believe requires an answer. Mr. Kezar is a man who from long association here knows the language and customs perfectly, and as an authority on land titles, the Cuban law and the making of pure sugar cane syrup, the business he is engaged in, we take our hat off to him. Furthermore, he is thoroughly reliable. However, what he doesn't know about modern beekeeping would fill just as big a book as what he does about the other subjects mentioned:

"Your letter received, also the Bee Journal, and it is no doubt a very fine paper for United States. I am a personal friend of Mr. D. W. Millar, of Holguin, Oriente, and he is one of the leading bee-men of Cuba today so far as science goes, but the Cuban method has been 'skinned a mile' when it comes to money making and knowing the bee-business in Cuba. We have too many Americans that come here and try to revolutionize the Cuban ways, most of whom starve at it.

"Your theories and modern hives are all right, but for money making give me the real old Cuban ways. I own and control a little over 6000 colonies at the present time, and not one American hive, and even with the very low market price in Germany, we are making real money, while 90 percent of our American friends are either quitting the business or starving at it. So I cannot see my way clear to encourage in any way your business here, especially as it must all be done in Spanish." F. E. KEZAR.

Now from his personal standpoint only, he is right about the bee-business in Cuba. He buys swarms in logs at an average of 30 cents each and gives them to the natives on the halves. If they get 4 gallons per log annually, which they do not, and it sells at 12 cents per gallon, as it has this year, he has a good investment. By loading up the rear end of an occasional operator with fine shot, he can manage to get about his one-half all right, and this is all the beekeeping he has to bother with.

Modern equipment costs more to be sure, but in Cuba good locations and proper management will produce from 19 to 25 gallons on an average annually per colony (extracted). My average this year and last was 10 pounds, but a neighbor this year has secured from two different apiaries an average of 25 gallons. *Pure*, *clean* and *ripe* honey *extracted*, as it is only possssible to do so by modern methods, brings a much better price than *strained* honey. My extracted nets me from 5 to 8 cents per pound, 12 pounds to a gallon.

Of course, the man who has studied modern beekeeping knows the great difference in the percent of profit in its favor, but the beginner who may read Mr. Kezar's letter, should know both sides of the situation here, and I think he can readily see the difference from the explanation.

All that Mr. Kezar says about the many Americans who wish to change everything in a minute is correct. Likewise what he says about 90 percent of Cuba's modern beekeepers being failures is correct, and he might have included not only the beekeepers but all the English speakers who have come to Cuba. There are exceptions, however, and those who have studied the situation and mastered their subject are not failures. There have been many reasons for beekeeping failures, some on account of poor locations, fear of being stung, lack of capital, inattention to business and not properly mastering the business in detail, etc., but the main reason can be charged to producers of honey from log hives.

This *strained* honey, known all over the world as "West Indian" is dirty, will quickly sour, and is not fit for consumption, even if it were not doctored before being exported. The producer of *good*, *clean*, *pure*, *ripe* honey that has been *extracted*, has to sell his goods as "West Indian" in many cases, because he has no fit packages to ship *good* honey in, old dirty second-hand lard barrels being the main package obtainable here.

New clean tins or barrels imported from the States cost money, and in advance of the harvest at least six months, putting them out of the question for many, who have in the beginning started short. The dirty barrels and some supplies are advanced by the local honey buyers, and you take their prices for your goods. Good and bad is all the same to them, because they sell it all as bad and for what they can get, paying accordingly.

We can produce by modern methods just as good honey in Cuba as can be produced any place, if we do this by being clean, properly ripening our honey and packing it in clean packages, why should it sell for 30 and 40 cents per gallon with freight, and 10 cents per gallon duty paid in New York, when no better American honey is bringing 6 to 8 cents per pound? It should not and will not if the producer does his own exporting and selling, with a little sampling and advertising. The buyers will soon know whether he is sending good goods and whether or not he is reliable. Holguin, Cuba.

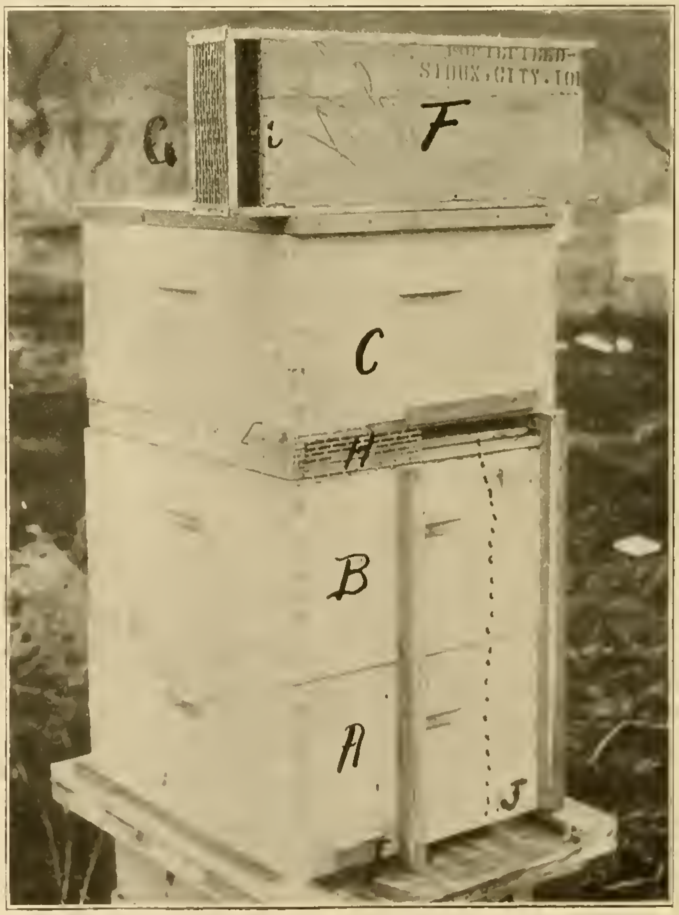


FIG 2.—ILLUSTRATING THE STRUCTUSE OF A SWARM SAVER

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

Minimum Strength to Fight

In treating colonies with European foulbrood by dequeening or caging the queen, all agree the first thing to do is to make the colony strong. I find ideas differ on this matter of strong colonies. What is the minimum strength with which you would expect success? New Jersey.

Answer.—You have struck a new question, yet now that it is asked the wonder is that it was never asked before. Without being dogmatic about it, I should say that the colony should be strong enough to have six Langstroth frames well filled with brood—to be more specific about it, each frame being three-fourths filled. I don't know, but I *think* it also important that there be a good force of *young* bees, and without this it would not be likely that six frames would be well filled with brood. Old bees that have begun work a-field are not the ones that do house-cleaning, and it may well be questioned whether doubling up such bees to any extent would answer the purpose.

Bee Paralysis—Keeping Queen in Upper Story

1. I have 16 colonies of bees all in 8-frame Langstroth hives, and one of my colonies shows signs of great restlessness at the entrance. (The queen is doing excellent work in both lower and upper stories, so they are extra strong in bees.) The alighting-board is covered all the time with bees running here and there in very much disorder and constantly pulling at one another, pulling bees out of the hive and dropping them in front of the entrance. What is the cause of this disturbance?

2. I read that it takes a working bee 21 days to hatch, but a queenless colony will rear a queen in 15 or 16 days, or even 10 days. Why will the queen hatch sooner than the worker?

3. I put a full depth super on top of one of my colonies, and an examination afterwards showed the queen was rearing brood very extensively in the upper story, and later on I examined the lower story and found that she had deserted it altogether, and the cells were all full of pollen. Could you tell how this could be avoided? Texas.

Answers.—1. Looks like bee paralysis. In the North this disease is not likely to amount to anything; but as far south as Texas it may be quite serious.

2. I can't tell you, any more than I can tell why it is that a queen will live several times as long as a worker. Possibly because in both cases the queen is much more important than a worker for the continuance of the colony.

3. A queen-excluder of perforated zinc will prevent the queen from going up.

Fastening Foundation Sheets—When to Buy Bees—Feeders

1. How do you fasten foundation sheets to the top-bars of shallow frames with no grooves and wedges?

2. Would medium brood foundation be all right used in shallow frames for chunk honey?

3. What time of the year is best to purchase bees?

4. What do you think of the Boardman feeder? Iowa

Answers.—1. With melted wax. Some use two parts wax to one of rosin. Make a board large enough to fit a bit loosely inside the frame, nail stops on the ends so as to let the frame go down half way, put frame over, then the foundation in place, and pour the melted wax from a spoon with its point bent together, or else with a special dropper The wax is likely to stick unpleasantly to the board unless you wet the board or else put newspaper over it. A brush may also be used to put on the wax.

2. Too heavy.

3. In the spring; although in some places you can buy more cheaply at swarming time.

4. Good; but when heavy feeding is to be done you would expect me to prefer the Miller.

Swarming—Color of Bees—Shade

1. I have three colonies and should like to increase and also try Caucasians. Could I take one or two frames from each colony, unite them and then introduce a Caucasian queen? Will it prevent the mother colonies from swarming? Can you suggest a better plan if mine isn't practicable?

2. What causes such a great diversity in color among the individual bees and also among the colonies in general whose queens are a mother and her daughters? What are the typical markings of a leather-colored Italian?

3. Is it very necessary that a colony have shade during the heat of the day? Washington.

Answers.—1. Yes, your plan is feasible. But taking away only one or two frames of brood from each colony is not likely to prevent swarming, although it will delay, and in a few cases prevent it. To fulfill your desire you will do well to follow what is called the Alexander plan, varied a trifle. Wait until the time comes when there is danger of swarming. Then put all brood but one in a second story, leaving in the lower story the one brood and the queen, filling out with drawn combs or frames filled with foundation, and pay no attention to where the bees are. Put a frame of comb or foundation in the second story to fill out the vacancy. Have a queen-excluder between the first and second story. A week or ten days later, lift off the second story and set it on a new stand, destroying all queen-cells if there are any. Twenty-four hours later give to this new colony a laying queen, a virgin, or a queen-cell.

2. If you have a pure Italian queen, her worker progeny all having the same markings, and from her rear a young queen, and this young queen mates with a pure Italian drone, you may expect to find the same markings in the worker progeny of the young queen as are found in the worker progeny of her mother. But if this young queen mates with a black drone, then you will find the worker progeny different, some of it looking like black workers and some like Italian, and perhaps intermediate markings. The distinctive markings of leather-colored Italians are the three yellow bands.

3. Different views are held as to the desirability of shade for bees, some even saying that they are better without it. No doubt there is in this respect a difference in localities. In my own locality I think they are better off with some shade, but it is more important for the beekeeper than for the bees.

What Hives Fill Best with Bees—Sections—Separators

1. I want to get new hives. What hive shall I select, principally for extracted honey? The hive I have been using is a trifle smaller than the Langstroth. Can I get the same enormous population by using two Langstroth bodies on top of each other as a brood-chamber, up to the time of the main flow, or can I get the same results by using a 12 frame hive?

2. Could you tell me which kind of section stands shipping better, the plain or the beeway, or is there no difference?

2 Which section super do you prefer, and would you advise plain or beeway sections, and which kind of separator? Holland.

Answers.—1. I don't know enough to answer very positively your questions, but gladly give my opinion, as far as I know. On the face of it, I should suppose that a queen would be very much bothered about going up and down from one story to another, and so would have a larger force of bees in a single story of the same capacity. I must say that an experience of years has not proven this to be true. So far as I have had any actual proof, I should say that if there is any difference at all between the queen's work in two stories and a single story of the same capacity, it must be very slight. At the same time there are, in other respects, advantages in favor of the single story.

2. As to the matter of shipping, I don't know but one kind is as safe as the other, but before the sections get into the shipping case the plain section is more likely to come to grief.

3. After a good deal of experience with different supers, I prefer the T super. A considerable experience with different kinds of sections makes me prefer the beeway, 4¼x4¼x1⅞. In handling the plain sections, one has to be more careful lest the fingers be thrust in them, and more careful lest they tumble over. A loose, plain wood separator serves well, is inexpensive, and easy to clean.

Moths—Swarming—Demaree Plan

1. Can you recommend any way in which moths can be prevented from entering hives? I lost three swarms last year with moths.

2. Do you think it best to use drone-traps and swarm-guards to prevent swarming?

3. What is the Demaree plan? Iowa.

Answers.—1. There is no way of preventing the entrance of the moth without preventing the entrance of the bees; the moth is smaller than the bee. Get good Italian stock, keep your colonies strong, and you need pay no attention to the moth. The bees will see to them.

2. They do not prevent swarming. All they can do is to catch the queen when the bees swarm.

3. The Demaree plan of preventing swarming is this: Put all but one brood in an upper story over an excluder, leaving the queen with the brood below.

Prevent Swarming—Strengthening Colonies—Caging Queen—Requeening

1. I have four colonies in a house apiary. I want to prevent swarming. Would it do to add a hive body with wired foundation below, as soon as the queen needs the room, then about three weeks before clover, or about May 20, put the queen below, then an excluder, then a super of shallow extracting frames, and over all the old hive body with brood, and about June 10 remove the old hive body from the top and put a comb-honey super between the extracting super

and the excluder? Provided I give ample super room, would that be likely to prevent swarming?

2. Could I strengthen two colonies with safety to both queens by putting the weak one over the strong one, *a la* Alexander, with two queen-excluders between, so as to keep the queens from fighting through, then put a newsparer between at time of uniting, *a la* Miller, and then separate about June 1, and have two colonies ready for clover harvest?

3. There is usually a fairly good fall flow here of aster, goldenrod and buckwheat, and I would like to know if caging the queen in June or July to prevent swarming would be practiced at a loss in regard to fall honey? Would not the removal of the queen for ten days during June result in the loss of about 20,000 bees, figuring 2000 eggs a day, that would be ready for a fall flow Aug. 15?

4. In J. E. Hand's article in Gleanings in Bee Culture Oct. 15, 1914, he says: "The reigning queen will be executed without parley or delay," and on page 998 of Gleanings for Dec 15, 1914, he says: "For bees have a decided antipathy against virgins when eggs and larvæ are present." Unless one dequeens how could one be sure there were no eggs or larvæ present? What is your experience with "requeening without dequeening?" PENNSYLVANIA.

ANSWERS.—1. Unless your bees are unusually "forward looking," they may be behind time on the program you are laying out for them. You say add a hive below "as soon as the queen needs the room," and evidently expect her to need it so early that she will have the brood-nest extended into the lower story by May 20. Maybe she will. Mostly, I should expect, she won't. At any rate it will do no particular harm to have the empty story below. Suppose there is nothing doing below, and May 20 you put the queen on the foundation under the excluder. In too many cases the queen will swarm out, unless you put something in the way of bait below. At any rate I've had them swarm out. Suppose, however, that the brood-nest is started below, or if not that you give a frame of brood. The bees will go to work all right (you must look out for cells in the old brood above); they will fill up the lower story, and then—swarm. Not always, but I should expect it to happen a good many times. They will not be so certain to swarm as if you had let them alone, nor will they swarm so soon. But you have operated so early that you may expect more swarming than you want. The later in the season you give the queen that empty story below, the more certain you will be to have no swarming. Put it off just as long as you can without having the bees actually swarm. If you wait until cells are started, and then operate, destroying the cells, you may feel pretty easy about swarming. Some report it a perfect preventive.

You propose to put a comb-honey super under an extracting super. That will be all right if the extracting combs are nice and white. If black from brood rearing your sections may be blackened

2. Yes, but you mustn't expect that each of your two colonies will be as strong as the stronger would have been if you had let it alone. Moreover, you will have to furnish a queen to one of them, for when you unite with newspaper one of the queens will be killed. I don't see what you want with that newspaper uniting anyway. If you leave the excluder until the time of separating the two colonies, you will have the two queens left—maybe. For if you leave one over the other too long, one of the queens will be killed. I don't know how long that is, probably longer at one time than another, but I am afraid in any case you cannot leave them together as long as you propose.

3. You are probably overestimating the number of eggs laid daily. If we allow three-fourths of the frame to be occupied with brood, a queen laying 2000 eggs daily would keep eight frames occupied. I don't think many queens do that when the season is so far along. Whatever is the right figure, it will be just so much loss in your honey crop. The question is whether the loss might not be still greater if the bees should swarm.

4. To your question how one can be sure, without dequeening, there were no eggs or larvæ present, I would say that with a laying queen present one may be practically sure eggs and larvæ *are* present. As to my experience at requeening without dequeening, I'm a failure. The trouble is that, as Josh Billings says, "So many things we know ain't so." You quote J. E. Hand as saying, "The reigning queen will be executed without parley or delay," when the combs with the young virgin are put in the hive. I fondly trusted that might be so, and before the appearance of Mr. Hand's article had tried it a number of times, but instead I found the virgin missing. Others had the same experience, as Mr. Hand reports Dec. 15. Like enough it will succeed where the old queen is one that the bees want to supersede anyway, and it is likely Mr. Doolittle had that in mind. But is it certain that bees have antipathy to a virgin when they have eggs and larvæ?

Hives With Portico—Winter Flight—Giving Room

1. What kind of a bee hive do you prefer without porch or with porch, and why?

2. In wintering bees outside do you think it is the sickly bees that go out to die when warm days come in winter?

3. When there is a good honey flow, and two supers full of honey, would it be best to take the two supers off and put on the third, or put the third one on top of the two, so as to give the honey a better chance to ripen? WISCONSIN.

ANSWERS.—1. The Langstroth hive was at first made with a portico. Latterly very few have the portico, perhaps chiefly because it furnishes such a nice refuge for spiders, causing the death of too many bees.

2. No; sometimes a large part of the colony comes out to take a sail in the air.

3. With a good flow on, it will probably never happen that it will be good practice to take off the two supers that are on, and leave the colony with one empty super. For the bees should always have at least plenty if not abundance of room, and so a third super should always be given before the first two are ready to be taken off. In my own apiary, a good flow being on, a super is not often taken off before three or four supers are on, and in a few cases there may be as many as seven or eight on. When the first two are pretty well filled, a third super is given below them, and like enough another on top. All this referring to a beekeeper running for section honey. With extracted honey all may be left on until the close of each particular flow, if not to the close of the entire season, or the honey may be extracted whenever it is ripe. The third super is generally given below, a queen-excluder being used. But E. D. Townsend, a very successful beekeeper, gives the empty super above, dispensing with the excluder. He says the combs filled with honey act as an excluder to keep the queen from going up into the empty super.

A Quarrelsome Neighbor

My only available place for beekeeping is in a country village. I have a somewhat quarrelsome neighbor. My bees sometimes swarm into his trees, and although I can get them out without damaging the trees, he usually objects and tries to assault me.

I am informed that there is a law permitting the beekeeper to get his bees in this sort of case. Do you know of this law? Also what shall I do to prevent him from assaulting me? MINNESOTA.

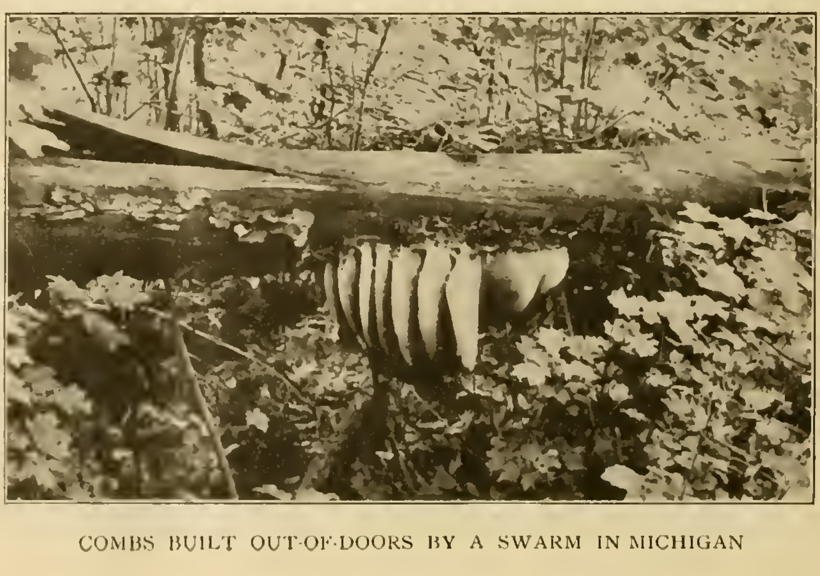
ANSWER.—Your question is one of law rather than of beekeeping. I have no copy of the Minnesota law, but no doubt you can get it from a lawyer or justice of the peace. But I think in any State of the Union a man can go upon the premises of another to secure a swarm, although he must pay for any damage, if any damage occurs in so doing. If he assaults you it is the same as assaulting you at any other time and place and you can bring suit against him.

Colonies Not Equally Strong—Wintering—Feeding—Early Drones

1. I have two colonies of bees which I hived last May. One of them produced about 50 pounds of surplus honey, while the other produced only 5 pounds. What was the matter with the second one? Was it an unprolific queen or not?

2. How is this for wintering bees: In the late fall after the honey-flow is over place a piece of burlap over the brood-frames and place a super filled with dry leaves on top of that?

3. What time in the fall should I begin feeding to keep the bees strong all winter and spring, and how much should I feed a



COMBS BUILT OUT-OF-DOORS BY A SWARM IN MICHIGAN colony per week? In the spring should I feed the bees after they began to gather pollen?

4. I noticed drones in one of my colonies March 27. Is that unusually early or not?

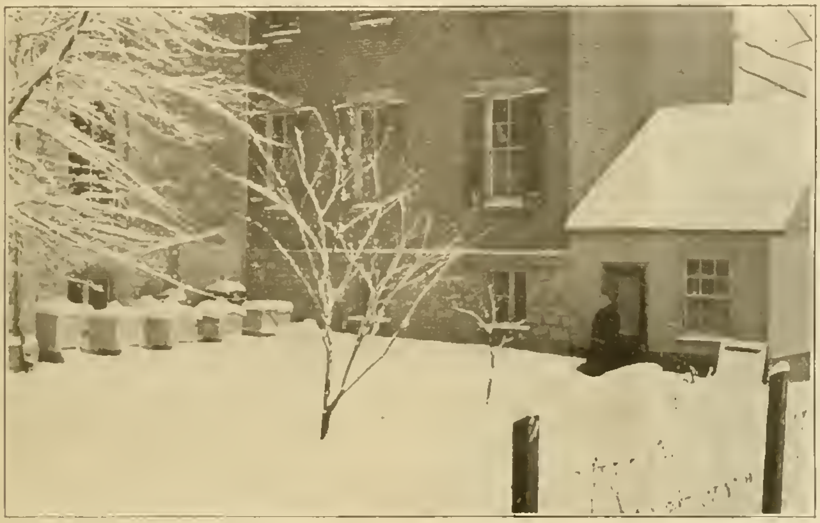
TENNESSEE.

ANSWERS.—1. I don't know. Hardly because one of the queens was not so prolific as the other, provided the two were of equal strength at the time the swarms were hived, for it is quite likely that most of the surplus was stored by the bees that went with the swarm, although if there was an important late flow the new bees might count. It may be that there was a difference in the strength of the two swarms at the time they were hived, and it must be remembered that a colony twice as strong as another will store a good deal more than twice as much surplus. The difference may have been in the character of the bees. Some bees are more industrious than others. There may have been other causes, or a combination of causes.

2. For your locality it would be hard to find anything better.

3. Like enough you will get best results if you feed not at all, either fall or spring, making sure that the bees have abundance of honey in the hive of their own storing. If they haven't enough, then you must feed, whether it be fall or spring. I haven't done any feeding for some time, and am rather proud of it. In one sense, however, I do feed, for each spring I give to any needy colony one or more combs of sealed honey saved over from the previous year. If my hives were larger this might not be necessary.

4. It would be very early for northern Illinois, and I suspect it is for Tennessee. A bit of danger that you may have a queenless colony.



WINTER SCENE IN INDIANA—MONASTERY APIARY OF THE FRACISCAN FATHERS AT OLDENBERG, IND.

REPORTS AND EXPERIENCES

A Monastery Apiary—Dr. Bonney's Chaff Hive—Wintering, Etc.

Although the winter has been unusually rigorous, bees in this section seem to be wintering in first-class condition. In most cases they went into winter quarters heavy with well-ripened stores from the aster and goldenrod, and this, with judicious packing, assures good wintering.

The crop was almost a total failure in many parts of the country, but we of Franklin county can make no complaint, as we reaped a bounteous harvest. The spring flow was mostly from whitewood (*Liriodendron tulipifera*), and the fall flow which was an unusually heavy one was, as is generally the case, from the white aster and the goldenrod. From 11 colonies, spring count, we extracted about 700 pounds.

Dr. Bonney's chaff hive, a drawing and description of which was given in the American Bee Journal for July, 1914, has proved a grand success. I made one last summer and put a medium colony in it in August, and that colony stored, during the fall flow, a surplus of 65 pounds of extracted. This was from 20 to 35 pounds more than any other colony produced. All the colonies seemed to be of about equal strength in August, and therefore I am inclined to think that the *hive* was the main factor in putting this colony so far ahead of the rest. I think the readers of the Bee Journal owe Dr. Bonney a vote of thanks for the many useful hints he has given us from time to time these many years.

In the pictures I am enclosing, the hive in question can be plainly seen; it is the last hive on the right in the first row. Just behind and a little to the right of this hive you will perceive a unique winter-case. It is nothing more than an old trunk; but it fills the bill to a "T." I have learned from experience that bees will build up much better in spring if they have good protection during winter. Next winter will find all our bees in winter-cases like those shown in the first row, as I intend to make them during the summer vacation.

I am a theological student, and find that studying and beekeeping work well together and go hand in hand. I study during the winter and work with the bees during summer.

St. Francis of Assisi, whose follower I am, was a great lover of nature, and, with him, I believe there is nothing so conducive to our appreciation of the greatness and goodness of God than an intimate association with His lowly creatures which serve to increase His glory among men. I number first and foremost the honey-bee, the most thought-provoking and the most wonderful of them all.
BRO. PAUL.

Oldenburg, Ind., Feb. 12.

Aster for Wintering—The Caucasian

So many complaints have been made about bees not wintering well on the fall asters and other flowers that I began to think my bees were going to do the same. Our cellar is an ideal one, and the temperature seldom varies more than 2 degrees from 44 Fahr. The bees were set out on April 14 with a very small percent of loss, and that was all among the *Italian* and their crosses. This apiary consists about equally of Italian and Caucasian, and they were all of the same weight and condition, as they were all run for extracted honey, and all had the same treatment. I did not think of trying any experiment to see if there was any difference in the kind of stores. This apiary is near a very large marsh and there is an abundance of wild flowers from April 15 to heavy frost.

The first honey is taken off, and they are allowed to fill the hives with Spanish-needle and aster honey for winter stores. This was an extraordinary year for fall honey with us, and all hives were full and there was no occasion to feed. They were set in the cellar about the first of December, making the confinement about 135 days.

All pure Caucasian colonies were set in a part of the yard by themselves and the rest occupied the other part. We did this as we are going to move all but the Caucasians to another yard, which will be our clover honey yard. Therefore, we had a very good chance to observe the difference in the wintering of the two races. We found that among a good many of the Italians we had to change the bottom-board, as it was so badly daubed from dysentery that the entrance was nearly closed. Of course, this occurred to only a few, but the Caucasians were entirely free from any trace of dysentery. We were more than pleased with the way they came out. There is another great trait of the Caucasians, and that is the way they stick to their location after they have had their flight. We found practically no drifting with them, but not so with the Italians.

The Caucasian bee will come into its own if we only give it free and unbiased trials. They are the first to build up in the spring, and the first to enter the supers, and are very quiet, no disturbance excites them; and the best of all is they cap their honey snow white, which means thick well ripened honey. The queens are long lived, doing good work at five years if well bred and well developed. They are the best bees ever imported into this country. A. D. D. WOOD.

Lansing, Mich.

Backward Spring

This is a very backward spring. Soft maple has not bloomed yet, and peach trees are just beginning to bud.

Bees are strong and carrying willow pollen. They wintered very poorly in this section, with a 45 percent winter loss taking all the apiaries, good and bad. I only had a 12 percent loss in all seven yards. Some yards lost none, while others lost heavily.
W. L. LOVEJOY.

Clarkston, Mich., April 19.

Good Record

I put 121 colonies in the cellar last winter. I lost three, one starved to death, and two were queenleess. At present I have 118, and all are strong. We have a good prospect for honey here now. W. W. LESTER.

Glidden, Iowa.

Good Prospects

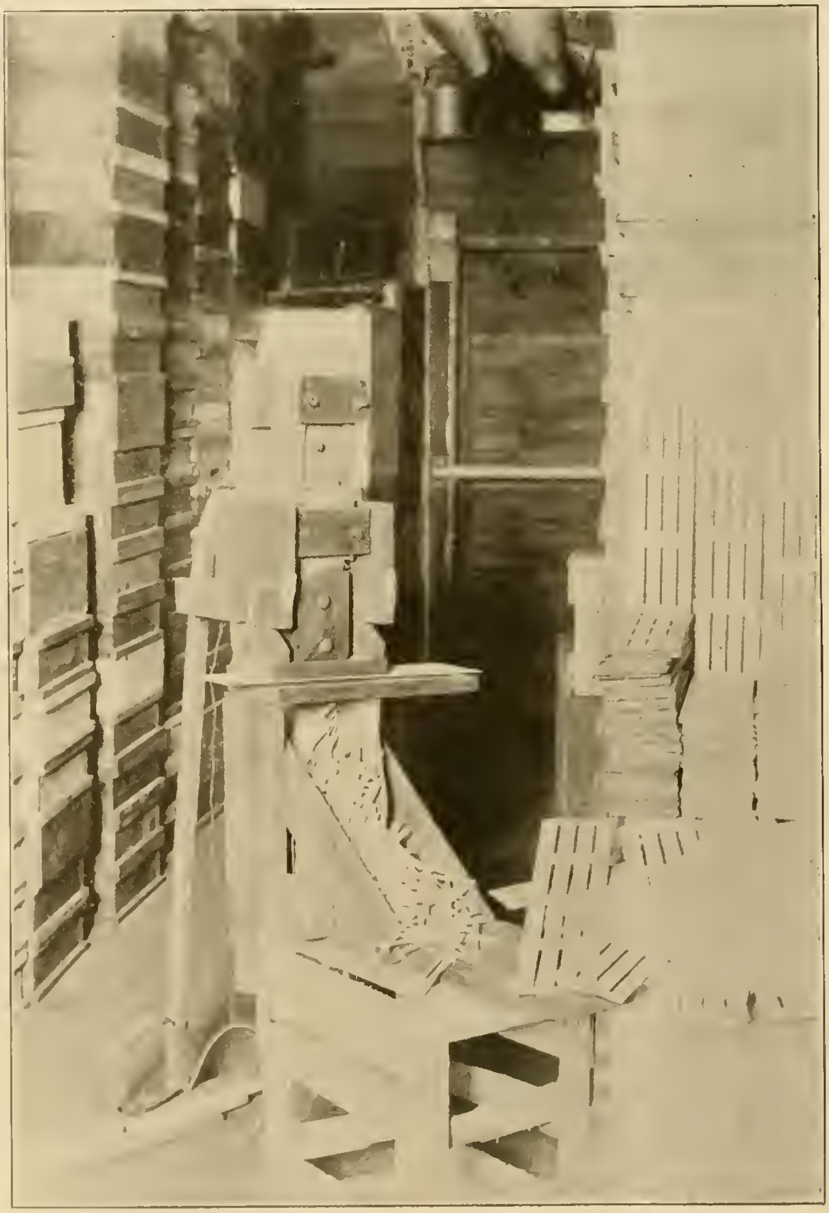
Bees wintered finely. I put 114 colonies in the cellar and took out 114 alive. They are building up in good shape. Clover is looking well. It has been dry for some time, but we have just had a fine rain. I cannot see any reason why we should not get a good clover flow if we get plenty of rain.
W. S. PANGBURN.

Center Junction, Iowa, May 5.

Bees in Bad Shape

Bees in this locality wintered poorly. One party 1½ miles from here, lost all he had—70 colonies. I had 168 colonies in the fall, and have only about 30 in fair condition, and ten poor ones now The reason for this loss it was too cold and we had too much rain last year up to July 8, when the Mississippi river recorded the danger line. The flow came very late. Bees, in the meantime, had been working on fruit trees and melons, wherever

A CLOSER VIEW—MONASTERY APIARY, OLDENBERG, IND.



D G. LITTLE'S HOME-MADE MACHINE FOR CUTTING SEPARATORS.

the fruit was cracked by moisture. The consequences were that the honey fermented in the winter quarters, and the bees dwindled away. I did not get one pound of surplus honey last year, while three years ago I had 13,000 pounds. C. W. LANG.
La Crosse, Wis., May 10.

Colorado Prospects

We are having lots of rain and cloudy weather. Bees are not building up well, and a good many are weak. We hope for better weather soon. WESLEY FOSTER.
Boulder, Colo., April 15.

Prospects Not Good

We are having the coldest spell here that I have experienced for years. Nearly the whole spring has been cold and cloudy. The ground is very wet, and the season is fast advancing, and we need warm weather to accomplish results. I am feeding many colonies. This is unusual following a wet winter. We cannot tell what the crop will be. M. H. MENDLESON.
Ventura, Calif., April 30.

Wintered Well on Aster Honey

I had 54 colonies last fall that I wintered, and they had nothing but aster honey. It was the second time since I have been keeping bees that aster had any honey, and that is since 1908. I was afraid my loss would be heavy, but I lost only one colony, and it was light in bees in the fall, and the first cold spell we had they died. I had five colonies that were queenless in the spring, but this was not any fault of the stores, and there were plenty of bees.

The spring has not been very favorable, the weather was too cold through March and part of April, and it is very dry. There was no rain from March 22 until May 7.

There won't be any white clover here this year, as what little there was last year was killed by the dry weather last fall. We did not get any white clover last year.
Percy, Ill., May 10. JAMES T. JOHNSON.

Making Separators

I enclose a photograph of an aparatus for perforating separators. It is a rough looking machine, but does fine work. The perforations are three-sixteenths of an inch wide, and 3½ inches long. There is an iron plate below with three slots through which the steel blades punch out the strips as shown in photograph. The blades have chisel-like ends, one end starting first and going through with a shearing motion. It does not split the separators, and they will last longer than one cares to use them. I have several hundred that have been in use over six years, and have been scraped repeatedly, and will have to be thrown away still intact, as they are getting too much propolized to use further.

Bees work the sides and corners of supers with such separators better than they do with solid ones, making more uniform weight. To use the machine I sit astride with the left foot in the loop of the iron lever, and right foot in the wire loop which works the fender and removes the separator from the blades without breaking. It will perforate over 200 per hour.

The steel for blades cost 50 cents. It was sawed in three pieces with a hack saw and dressed to size with a file. It took quite a little tinkering to get it adjusted just right, but I am well satisfied with the time spent, as that is all it cost except 50 cents.

Bees have wintered unusually well. White clover was splendid last fall, but the ground has been covered with ice during the past three weeks, which may kill it out some if it holds much longer. D. G LITTLE.
Hartley, Iowa, March 11.

EAT HONEY

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary.
J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

Phelps' Golden Italian Bees are hustlers.

Send for my new booklet. It's free.
J. B. Hollopeter, Queen-breeder, Pentz, Pa.

Queens from the Penn Co. See our large ad. elsewhere in this Journal.

Vigorous prolific Italian queens, $1.00 each; 6 for $5.00.
A. V. Small,
2302 Agency Road, St. Joseph, Mo.

Archdekin's fine Italian queens and bees. See larger ad. in this issue.
J. F. Archdekin, Big Bend, La.

Golden all-over Queens of Quality. Untested, 75c; tested, $1.50.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

Queens of Moore's strain of Italians. Untested, $1.00 each; 6 for $5 00. Less in larger numbers. P. B. Ramer, Harmony, Minn.

Italian Bees—Untested queen, 60c; 2-fr. nuclei with Italian queen, $2 25; bees by the pound, $1.00.
Rosedale Apiaries
Big Bend, La.

Notice W. W. Talley will sell bright Italian queens this season at 60c each, $7.00 per dozen. Safe arrival guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Queens of Quality—I am booking orders for early queens now. Three-banded Italians only. Circular free.
J. I. Banks, Dowelltown, Tenn.

Italian and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.
Grant Anderson, San Benito, Tex.

Italian Queens for sale this season at 60c each; $7 00 per dozen. Ready April 15. Safe arrival guaranteed.
T. J. Talley,
Rt. 3, Greenville, Ala.

Place your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens.
John W. Pharr,
Berclair, Tex.

Quirin's superior improved queens and bees are northern bred, and are hardy. Orders booked now. Over 20 years a breeder. Free circular. H. G. Quirin, Bellevue, Ohio.

Golden Italian Queens, about June 1. Untested 75c; half doz., $4.00. Tested, $1.25. Pure mating guaranteed.
J. I. Danielson, Rt. 7, Fairfield, Iowa.

Try my best bright yellow queens. They are beautiful and good honey "getters;" 60c each or $7.00 per dozen. Safe arrival and satisfaction guaranteed.
M. Bates,
Rt. 4, Greenville, Ala.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Queens—The quality kind, 3 band Italians only. Winners at Hartford and Berlin, 1914. Untested after June 1, $1.00.
A. E. Crandall & Son, Berlin, Conn.

Queen Bees—Treasure State Brand leather-colored Italians; can't be beat Ready June 1 $1.00 each; $10 per dozen.
White City Apiaries, Lavina, Mont.

Italian Queens, also the Golden Beauties and Carniolans. Tested, $1.00. Untested, 75c each For bees by the pound and queens in lots write for prices. Page Bankston,
Buffalo, Tex.

Queens ready in May. J. E. Hand strain of 3-banded Italians, extra good workers and very gentle. Prices, select untested, $1.00 each; 6 for $5 00, Select tested, $1 75 each; 6 for $9 00. Breeders, $5 00 each.
J. M Gingerich, Kalona, Iowa.
(Formerly Arthur, Ill.)

For Sale—Fine honey gathering strain of Italian bees in pound packages. One lb., $1 50; 10 lbs, $12 50; 100 lbs, $100. Special prices on larger quantities Small shipments by return mail.
Leib & Miller,
R. F. D. 7, San Jose, Calif.

Wanted—To send our list to you of our famous honey gathering and almost non-swarming strain of Golden queens. No better bees of any strain to be found One fr. untested, $1.00; 6 for $5.00; 12 for $9 00. Write us what you want
T. S. Hall,
Talking Rock, Ga.

The Secret of Success is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and $1.00 for tested
G. W. Moon,
1004 Adams St., Little Rock, Ark.

Queens, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

For Sale—After June 15 Golden Italian queens. Strictly northern bred and hardy. Fine honey gatherers and gentle. No disease. Safe arrival guaranteed. Untested, $1.00; 6, $5.00; 12, $9.00. Tested queen after July 15, 50c each extra.
J. Stuart Scofield, Kirkwood, N. Y.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1 50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

Three-Banded Italian Queens ready April 1, of an exceptionally vigorous and long-lived strain of bees They are gentle, prolific, and good honey gatherers. Untested, $1.00; 3, $2 50; 6, $4.50; 12, $8 00. Tested, $1.25; 6, $6 50; 12, $12. Jno G. Miller,
723 So Carrizo St., Corpus Christi, Tex.

Notice—R. A. Shults will sell Italian queens in the season of 1915. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00 Breeders, $5.00. Bred from Moore and Doolittle stock.
R. A. Shults.
R. F. D. 3, Cosby, Tenn.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

I can supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed.
I. N. Bankston, Buffalo, Tex.

Famous North Carolina Italian Queens for for sale. Reared from Howe's best breeders. Mated with Root's, Moore's, Davis', select stock. Free from disease. Untested, one 75c; per doz, $7.50. Select untested, one, $1.00; per doz., $9.00. Tested, $1.25; select tested, $1.50. Breeders, $3.00 and $5.00.
H. B. Murray, Liberty, N. C.

Golden Italian Queens that produce golden bees and good honey gatherers. Tested, $1.00 Select tested, $1.25. Untested, 70c; dozen, $8.00. After July 1 untested, 60c; dozen, $7 00.
D. T. Gaster
Rt. 2, Randleman, N. C.

Bees and Honey for Sale—Nucleus, 1-frame, $1.50; 2 frame, $2 25; 3 frame, $3.00. Bees by the pound, ½ lb., $1.00; 1 lb., $1.50; 2 lb., $2.00. All the above without queens, f. o. b Chriesman, Tex. Queens, untested, 75c; tested, $1 00. Prices of honey given on application. Address,
J. W. Small, Chriesman, Texas.

During spring and summer months we requeen all our two thousand colonies to prevent swarming The queens removed from those hives are only one year old and of best Italian stock. We offer these queens at 50c each; $5.40 per dozen Satisfaction guaranteed or money back No disease.
Spencer Apiaries Co., Nordhoff, Calif.

For Sale—Queens, three-band Italians Extra good strain. Their bees are great hustlers. Only drones from selected queens near mating yard Untested, one, $1 00; 6 for $4 50; 12, $8 00 Ready June 15. When ordering, state time within which queens are wanted They will be mailed promptly or money returned.
D. G. Little,
Hartley, Iowa.

For Sale—Three-banded Italian queens from the best honey-gathering strains, that are hardy and gentle. Untested queens, 75c; 6, $4 25; 12, $8 00. Tested queens $1 25; 6 $7 00; 12, $12. Selected queens, add 25c each to above prices. Breeding queens, $3 00 to $5 00 each. For queens in larger quantities, write for prices and circulars.
Robert B. Spicer, Wharton, N. J.

500 Sample Queens at 40c on first 500 orders. Moore's Strain Leather Colored Italians. Write for particulars and prices in quantity. April and May orders booked now on 10 percent deposit. Orders filled promptly or notice given when such deliveries can be made. Regular prices: Untested queen, 75c; six $4.25; twelve, $8 00. Timberline Riggs, breeder.
Ogden Bee & Honey Co., Ogden Utah

The Booster—A popular paper at a popular price. A brand new paper devoted to the selling end of the honey business. Will discuss honey publicity in all its bearings relating to honey production. Suitable alike for the small producer and the specialist. Begin with the first number. You will appreciate every page. 25c for a whole year's subscription—clubs of five, $1 00.
Geo. W. Williams, Redkey, Ind.

Queens of Quality—Our hand Moore strain of 3-banded Italians are beautiful and good honey gatherers. Secured 223 sections comb honey from best colony in 1914 season. Only drones from selected queens near mating yard. Bred strictly for business Untested, 75c; six, $4.00. Select, $1.00. Queens mailed promptly or money returned
W. A. Latshaw Co., Clarion, Mich

Gray Caucasians—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application.
J. J. Wilder,
Cordele, Ga

Bees and Queens—California queens-nuclei and bees, bred from the best Doolittle stock. Our customers say they are hustlers. A sample order will prove it to you. We can fill any sized order at once Queens, untested 75c; doz., $8.00. Select, $1.00; doz., $10. Tested, $1 25; doz., $12. Select, $1.50; doz., $15. Tested, 1-year old, 75c; doz., $8 00. Select, $1.00; doz., $10 Nuclei, 2 frames, $1.50; 3 frames, $2 25; 5 frames, $3 00; 10-frame colony, $4 50. Bees by the pound ½ lb. pkg., 75c; 1-lb. pkg., $1.00; 2-lb. pkg., $1 75; 5-lb. pkg., $4 00. Add price of queens desired to all above bees and nuclei. Special discounts—on lots of 100 or more. Any one of the above queens free or 10 percent discount from your order if you will send us the names and addresses of your neighbor beekeepers. Delivery guaranteed. No disease.
Spencer Apiaries Co., Nordhoff, Calif.

FROM SOUTHERN NEW MEXICO—My yards will be able to furnish you bees by the pound at an early date. No disease. Satisfaction must be yours. Write at once. I can surprise you on prices. Established in 1914. S. Mason, Hatch, New Mexico.

MOORE'S STRAIN and Golden Italian queens. Untested, one, $1.00; 6, $5.00; 12, $9.00; 50, $35. Carniolan, Banat and Caucasian queens. Untested, one, $1 25; 6, $6.00; 12, $10. Tested, any kind, one, $1 50, 6, $8 00 Choice breeding queens of any kind, $5.00 each. Nuclei, 2-frame, $2.50; 3-frame, $3.25; 10 frame, full colony, $5.00. Bees by the pound, $1 25. Add price of queens desired to all above nuclei and bees. Comb foundation, Circular free. Genuine orange blossom and mountain sage honey, one gallon can, $1.20; five gallon can, $5 50; case, two five gallon cans, $10. Samples, 10c each. Everything securely packed or crated and delivered at Orange depot. Safe arrival and satisfaction on everything we ship guaranteed. W. H. Rails, Orange, Calif.

HONEY AND BEESWAX

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

HONEY FOR SALE—Have on hand 1,000 lbs. new imported Hymettus Honey. Make offer for part or entire lot. Chas. D. Stone & Co.,
Custom House Brokers,
112 West Adams St., Chicago, Ill.

SUPPLIES.

BEE SUPPLIES, all kinds, low prices. Catalog free. J. W. Rouse, Mexico, Mo.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

BROTHER BEEKEEPERS, send for my new prices on Supplies. I can save you money. Beeswax wanted. W. D. Soper,
Jackson, Mich.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

FOR SALE—I am selling foundation and paying the freight to your station anywhere in La. Root's goods for sale. Send me your orders. Am paying 28c cash for wax or 30c in trade delivered here.
J. F. Archdekin, Big Bend, La.

STANDARD DOVETAILED HIVES shipped direct from factory in Iowa. Fine 8 frame for $6.00. Hoffman frames, $2.75 per hundred. Plain sections, $4.20 per M. Write for prices on what you need—a full line.
The Stover Apiaries, Mayhew, Miss.

LEWIS BEEWARE—Root's extractors, smokers, etc. Dadant's Comb Foundation. Large stock always on hand for prompt shipment. Western beekeepers can save money by patronizing the oldest co-operative association of beekeepers. Illustrated catalog free.
The Colorado Honey Producers' Ass'n.
Denver, Colo.

SUPPLIES—California redwood hives, single story, 85c; supers, 25c; frames, 1⅓c each. 10 percent discount in lots of 100 or more of any of above. Special 5 percent discount on all supplies. Let us show you some of our bargains by sending our catalog. It's free. Also a fine hive scraping tool by mail free, if you will send us names and addresses of your neighbor beekeepers.
Spencer Apiaries Co., Nordhoff, Calif.

FOR SALE

FOR SALE—10 new 10-fr. D.T. hives, 1 story, nailed and painted at $1 50 each. 1250 new No. 1 4x5x1⅜ plain sections at $5.00; 60 second hand comb honey supers, 10 frame, for 32—4x5x1⅜ plain sections, well painted, at 35c each. All Lewis goods.
Fred H. May, Meredosia, Ill.

FOR SALE OR EXCHANGE for honey or beesuplies, 1912 8 H. P. American twin cylinder motor cycle. Cost $240. What's your offer? Emil E. Nelson, Route 2, Renville, Minn.

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PARTRIDGE ROCK EGGS for hatching, $3.00 per 15. Neville Poultry Farm Kewanee, Ill.

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LEARN Jiu Jitsu by mail F. McCaun,
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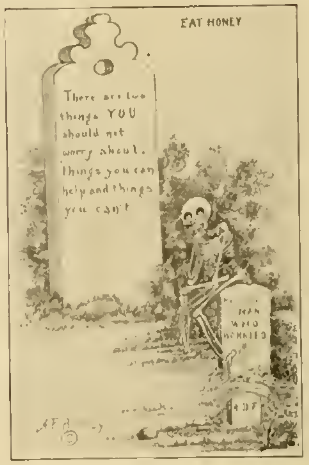
HONEY LABELS and printing for beekeepers. Catalog free. Liberty Pub Co.,
Sta. D., Box 4 H, Cleveland, Ohio.

ANT RID destroys ants in the house, apiary or lawn Guaranteed. 25c postpaid. Man'fd and for sale only by
A. D. D. Wood, Box 61, Lansing, Mich.

I AM REWRITING, revising and enlarging the "Pearce Method of Beekeeping." It was my intention to have it out by the first of March, but owing to a spell of sickness it was delayed, but will be out on or before the first of May. Order then. The price, 50c, will be the same as the first edition. Address. J. A. Pearce,
Rural 1, Grand Rapids, Mich.

EAT HONEY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There are two things YOU should not worry about. things you can help and things you can't
MAN WHO WORRIED
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IT'S A LONG WAY TO TIPPERARY

But it's a short way to success if your colonies are headed with queens from **The J. E. Marchant Bee and Honey Company,** breeders of the highest grade of Island-bred Italian Queens.

Pure mating guaranteed. Prices as following:

	1	6	12
Untested queens	$1.50	$ 7.50	$12.00
Tested	2 00	10.50	18.00
Select tested	3.00	15.00	24.00
Breeders...... $5.00 and	10.00		
Extra select breeders.	25 00		

	1	6	12
½-lb. Bees	$1.50	$ 7.50	$12.00
1-lb. "	2.00	10.50	18.00
2 lbs. "	3.00	15.00	27.50
3 lbs. "	4 00	21.00	36 00
5 lbs. "	5.50	27.50	50.00

These prices are without queens.

We will ship from Canton, Ohio, after June 1.

We guarantee safe delivery and a square deal. **Watch us grow.**

The J. E. Marchant Bee & Honey Co.,
Apalachicola, Florida

Untested Italian Queens

For a number of years we have been furnishing Italian queens to our customers, and their words of encouragement have led us to believe that our services are appreciated. Being in touch with many large breeders, we are in a position to furnish untested queens of first quality with but little delay. We can furnish either ordinary leather-colored or bright yellow queens as preferred. Prices as follows:

BEFORE JULY 1.

1 untested	$ 1.25	Tested Queens $1.75 each
6 "	5.50	
12 "	10.00	

AFTER JULY 1.

1 untested	$1.00	Tested Queens $1.50 each.
6 "	4 50	
12 "	8.50	

Special prices on larger lots on application.

CAUCASIAN QUEENS

There has been much inquiry for this race of bees. We can fill orders for these queens at the same rates as above.

American Bee Journal, Hamilton, Illinois

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Leathered-colored Italians. Hardy, northern reared. Up-to-date methods. Until June 1, tested, $2.00. After $1.50. Untested, $1.00; 12 for $10. Large orders a specialty.

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Owner—C. P. Dadant, Hamilton, Ill.

Known bondholders, mortgagees, and other security holders holding one percent or more of total amount of bonds, mortgages or securities—None.

[Signed] M. G. Dadant, *Manager*.

Sworn to and subscribed before me this 30th day of March, 1915.

[SEAL.] H. M. Cuerden.
Notary Public.

My Commission expires Aug. 25, 1917.

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For tested Queens will be filled by return mail. Three-banded Italians only, bred to a high standard of excellence. Never a case of foulbrood in our apiary, which was established in 1886. Tested Queens, $1.00. Untested, $1.00; per doz. $9.00. Satisfaction guaranteed.

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Miller's Strain Italian Queens

By RETURN mail after June 5th to 10th, or money refunded. Bred from best RED CLOVER strains in the U. S. In full colonies from my SUPERIOR BREEDERS; northern bred for business; long tongued, three banded, gentle, winter well, hustlers, not inclined to swarm; roll honey in. One untested, $1.00; 6, $5.00; 12, $9.00. One select untested, $1.25; 6, $6.00; 12, $11.00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, Brookville, Pennsylvania

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, $1.00; 6, $5.00; 12, $9.00
Select untested, $1.25; 6 $6.00; 12, $11.00
Safe arrival and satisfaction guaranteed. Circular free.

J. P. MOORE,
Queen-breeder Rt. 1, Morgan, Ky.

SELL YOUR QUEENS IN CANADA

IN the Province of Ontario alone there are 11,000 persons producing honey. A very conservative calculation means that there are 50,000 Queens. If you have Queens to sell to Canadian bee men, say so in The Canadian Horticulturist and Beekeeper, the only bee publication in Canada. It is the official organ of the Ontario and New Brunswick Beekeepers' Associations.

Classified rate 3 cents per word—each single number and sign counting as one word. Cash in advance.

Specimen copy on request.

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ENGRAVERS-ELECTROTYPERS
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Italians, the pure three-banded stock from imported mothers. Carniolans, the pure dark grey stock from Carniola. Queens will be ready to ship early in March. No disease. Prices, 75 cents each. $8.00 per dozen.

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Hand-woven, soft, durable, comfortable. Good as the South American Panama but cooler, lighter, more dressy. Direct from maker to you $1.50 postpaid. State size and send money order. Money refunded if you are not perfectly satisfied. Very stylish for Ladies this year.

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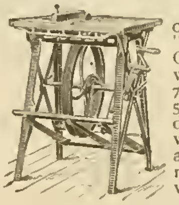

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QUEENS OF QUALITY

Three band, leather color, select untested, 75 cts. each; $8.00 per dozen. Satisfaction guaranteed. Circular free.

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Send in your subscription to **The Leghorn Journal** and keep posted on the progress of the Leghorn industry; as it is devoted exclusively to the different Leghorn fowls. Subscription price 50c per year. Special offer—Send us 10c and the names of five of your neighoors interested in Leghorns, and we will send you The Leghorn Journal for three months.

THE LEGHORN JOURNAL
Appomattox, Virginia

Weber Service!

At this time of the year it is especially important that the Beekeeper be able to secure his supplies without delay. With the promise of an early spring and a heavy honey-flow this is doubly important.

Root's Goods and Weber Service

IS A COMBINATION THAT IS HARD TO BEAT

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Our 1915 catalog will be promptly mailed to any one interested.

C. H. W. WEBER & CO.,

2146 Central Avenue, Cincinnati, Ohio

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"The proof of the pudding is in the eating," runs an old adage, and so we might say that the superiority of our section honey boxes and comb foundation is proven by the fact that we sell, annually, about 25 million section honey boxes and, on an average, about 200,000 pounds of comb foundation. They are made of the finest basswood, carefully selected and seasoned, polished on both sides in double-surface sanding machines, and are noted for the smoothness of the dovetailing and the ends of the sections. Our "Weed" process comb foundation is so well known and has been so often described in detail, that we need not dwell on it at this time; suffice it to say that three-fourths of the comb foundation now used in the world is made by this process and with our comb-foundation mills.

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BEE KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

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Pay You to Buy Bee Supplies Now

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

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By using **Dittmer Foundation** the bees like it for it's made to just suit them, and is just like the Natural Comb they make themselves.

Send for prices on having your Beeswax made into Comb Foundation, which includes all freight charges being paid.

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Gus Dittmer Company, Augusta, Wisconsin

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I have moved South to secure more favorable conditions and increased facilities for producing my well known queens and bees, and will do my best to keep up with orders. Cells are built in strong two-story colonies, securing big well-fed cells and mated to select drones. Every queen guaranteed first class. Safe arrival and satisfaction. No disease. Ready April 15. Nuclei May 15. Order now for early delivery. Untested, $1,00 each; 6 for $5.50; doz , $10; 1-lb. bees, no queen, $1.50; with queen, $2.00; 2-fr. nuclei with untested queen, $3.50; 2 for $6.50; 5 for $15. Nuclei on Hoffman frames, wired from full sheets. First-class. Prompt attention to orders. Root's goods for sale.

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Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description. Shipping-cases, Section-holders, Comb-foundation, Smokers, etc.
Get my prices before placing your orders.

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AUG. LOTZ CO. BOYD, WIS.

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DON'T FORGET
HERE IS THE
ONLY PLACE
YOU CAN GET

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SERVICE
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SPECIAL HIVE

THE NEW MUTH 1915 CATALOG
Send for it—Watch for it—Wait for it

It is now out. If you have not received your copy, send for same at once. It is free for the asking. Everything you need is there—HIVES—BROOD FRAMES—FOUNDATION—SECTIONS—SMOKERS—BEE-VEILS—BRUSHES, Etc., Etc.

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"The Busy Bee Men"

204 Walnut Street, - CINCINNATI, OHIO

P. S.—Ship us your old combs and cappings, and let us render them for you. Our process extracts the last drop of wax from the slumgum. This means money for you. Write for full particulars.

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Rendering Combs

Cappings or slumgum is a "mussy" job at best. We are equipped for this work, and will render yours for you on shares. Send for our terms. For your share of the wax we will either pay you cash, ship you goods in exchange or manufacture it into

Dadant's Foundation

Known and liked the world over because it is just like the combs the bees make themselves.

Bee Supplies

We carry a large stock of all kinds of bee supplies. Drop us a card, making known your wants. We guarantee satisfaction in every way.

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DADANT & SONS,
HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

JULY

1915

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BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec15" on your label shows that it is paid to the end of December, 1915.

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Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

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☞ **Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD**

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
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Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n } **ANTHONY BIAGGI,**
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This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

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LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

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Dept. S., Kansas City, Mo.

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IN the Province of Ontario alone there are 11,000 persons producing honey. A very conservative calculation means that there are 50,000 Queens. If you have Queens to sell to Canadian bee men, say so in The Canadian Horticulturist and Beekeeper, the only bee publication in Canada. It is the official organ of the Ontario and New Brunswick Beekeepers' Associations.

Classified rate 3 cents per word—each single number and sign counting as one word. Cash in advance.

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The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

Everybody knows that by following the Campbell System of Soil Culture, crop yields have been doubled in every State of the Union from New York to California. Why not learn what the principles of the Campbell System are and adopt them? You can get all this and a thorough agricultural education without leaving home by taking a course in the

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You can have your choice of eight courses, Soil Tillage, Soil Improvement, Small Farming, Horticulture, Irrigation, Dry Farming, Farm Engineering and Animal Husbandry, all for a nominal tuition fee, no board to pay, no books to buy, everything furnished, and you can use your spare time while still running your farm or holding your job.

We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad, but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

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IT'S A LONG WAY TO TIPPERARY

But it's a short way to success if your colonies are headed with queens from **The J. E. Marchant Bee and Honey Company,** breeders of the highest grade of Island-bred Italian Queens.

Pure mating guaranteed. Prices as following:

	1	6	12		1	6	12
Untested queens	$1.50	$ 7.50	$12.00	½-lb. Bees	$1.50	$ 7.50	$12.00
Tested	2 00	10.50	18.00	1-lb. "	2 00	10.50	18.00
Select tested	3.00	15.00	24 00	2 lbs. "	3.00	15.00	27.50
Breeders...... $5.00 and	10.00			3 lbs. "	4 00	21.00	36.00
Extra select breeders.	25 00			5 lbs. "	5.50	27.50	50.00

These prices are without queens.
We will ship from Canton, Ohio, after June 1.
We guarantee safe delivery and a square deal. **Watch us grow.**

The J. E. Marchant Bee & Honey Co.,
Apalachicola, Florida

LEGHORN BREEDERS!

Send in your subscription to **The Leghorn Journal** and keep posted on the progress of the Leghorn industry; as it is devoted exclusively to the different Leghorn fowls. Subscription price 50c per year. Special offer—Send us 10c and the names of five of your neighbors interested in Leghorns, and we will send you The Leghorn Journal for three months.

THE LEGHORN JOURNAL
Appomattox, Virginia

TEXAS QUEENS

Italians, the pure three-banded stock from imported mothers. Carniolans, the pure dark grey stock from Carniola. Queens will be ready to ship early in March. No disease. Prices, 75 cents each. $8.00 per dozen.

Circular free

Grant Anderson, San Benito, Tex.

CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.

J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

Wanted

Choice Grades of EXTRACTED HONEY

Send Sample and State Quantity

How packed and the lowest price you will take

We are always in the market for **Beeswax,** and pay highest market prices.

Hildreth & Segelken
265-267 Greenwich St., New York, N. Y

TRY MY FAMOUS QUEENS

From Improved Stock

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, 1, $1.00; 6, $5.00; 12, $9.00; 25, $17.50; 50, $34; 100, $65 Tested, 1, $1 50; 6, $8.00; 12, $15.00. Breeders of either strain, $5 00. Nuclei with untested queen, 1-frame, $2 50; six 1-frame, $15 00; 2-frame, $3.50; six 2-frame, $20.40; nuclei with tested queen, 1-frame, $3.00; six 1-frame, $17.40; 2-frame, $4.00; six 2-frame, $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

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Sections, Comb Foundation

Choice Northern-Bred Italian Queens

Bees by the pound

General Agents for Root's Goods in Michigan

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Lansing, Mich.

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate; purest of the pure.

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
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NEW BINGHAM
BEE SMOKER
Patented

Have been on the market nearly 40 years, and are the standard in this and many foreign countries. Insist on the genuine improved articles from your dealer or direct from manufacturers.

Postage extra			ship. wt.	Price
Smoke Engine,	4	inch,	28 oz.	$1.25
Doctor	3½	"	26 oz.	.85
Conqueror	3	"	23 oz.	.75
Little Wonder	2½	"	16 oz	.50
Smoke Engine or Doctor in copper 50c extra				
Uncapping Knives, improved Cold Handle				
Stan'd Length	8½	"	20 oz.	.75
Extra long	10	"	24 oz.	.85
Steam Heated 3 feet tubing			36 oz.	2.50

A. G. WOODMAN CO.,
Grand Rapids, Mich.

QUEENS—Golden and Leather-colored

We are in position to fill your orders for queens and bees from date of this "Journal" until October 1, 1915, at following prices:

Prices of one and over	1	6	12
Virgins	$ .50	$2 75	$ 5 00
Untested	.85	4.50	8.00
Select untested	1.00	5.00	9.00
Warranted	1 10	5.50	0 50
Tested	1 50	7 50	13.50
Select tested	1.75	9.00	15 00
Tested breeding	3.00		
Select tested breeding	5.00		
Ex. select test. breeding	7.50		

1 frame nuclei without queen	$1.50
2 frame nuclei without queen	2.75
3 frame nuclei without queen	3.50
Colony 8-frame hive without queen	7.50
Colony 10-frame Danz. without queen	0.50
Colony 10-frame hive without queen	9.50

When queens are wanted with nuclei and colonies, add queens at prices as above for queens.

Bees by Pound F. O. B. Penn., Miss.

½-pound package, wire cage	$1.00
1-pound package, wire cage	1 50
2-pound package, wire cage	2.00

No queen supplied at these prices. Make selection and add to above prices.

All bees and queens shipped from our yards at Penn, Miss. We have no disease, nor do we know of any diseased bees in this State. Our queens are bred from highly selected stock of uniformly marked bees; for gentleness and working qualities they are unsurpassed; they are world-beaters as honey-gatherers. We consider these queens the equal of any on the market, and years of favorable reports substantiate this claim. In ordering you have the choice of selecting three-banders or goldens Prompt attention given to all orders and inquiries. Read The A. I. Root Company's endorsement below.

MEDINA, OHIO, February 6, 1014.

THE PENN CO., Penn, Miss.

Gentlemen:—Replying to yours of February 3, we would state that we have bought a large number of queens of you. We have found them uniformly marked, and of a good stock; in fact, they are first-class in every respect Another thing, we have always found that you make prompt deliveries, or give us notice promptly when such deliveries could not be made.

THE A. I. ROOT COMPANY,
Per E. R. Root, Vice-president.

Our record last year, about 10,000 queens, and shipments to all important foreign countries; every State in United States and Canada, and only two complaints, which we readily made good. Try us. We are sure to please you.

Our QUEENS all around the world. The sun never sets on a Penn Co.'s queen.

THE PENN COMPANY, Penn, Lowndes County, Mississippi

Representatives of The A. I. Root Company, and Queen Specialists.

The Bee-Supply Season is Here—We are Ready for Your Bee-Supply Orders

DON'T FORGET HERE IS THE ONLY PLACE YOU CAN GET

MUTH

SERVICE
QUALITY
SPECIAL HIVE

THE NEW MUTH 1915 CATALOG

Send for It Watch for It—Wait for It

It is now out. If you have not re ved your copy, send for same at once. It is free for the asking. Everything you need is re—HIVES—BROOD FRAMES—FOUNDATION—SECTIONS—SMOKERS—BEE-VEII -BRUSHES, Etc., Etc.

THE FRED W. MUTH COMPANY

204 WALNUT STREET "The Busy Bee Men" CINCINNATI, OHIO

P. S.—Ship us your old combs and cappings, and let us render them for you. Our process extracts the last drop of wax from the slumgum. This means money for you. Write for full particulars.

PROTECT YOUR BEES AGAINST FOULBROOD

By using "falcon" queens

One of the prominent beekeepers of New York State writes:

"The queens received from you this season have been perfectly satisfactory. For cleaning up foulbrood they cannot be beat. We could not ask for any better queens, and I have not heard any fault found from parties I have sold to."

Can you afford to run the chance of letting foulbrood invade your apiary when **"Falcon"** Italian queens are no more expensive than the ordinary blacks and hybrids which oftentimes cause a catastrophe in an apiary by being so susceptible to foulbrood.

PRICES OF "FALCON" QUEENS—THREE-BANDED ITALIANS, GOLDEN ITALIAN AND CARNIOLANS

After July 1	1	6	12
Untested	$ .90	$5.00	$ 9 00
Select untested	1.00	5.50	10.00

After July 1	1	6	12
Tested	$1 50	$ 8 00	$15.00
Select tested	2.00	10.00	18 00

SAFE ARRIVAL AND SATISFACTION GUARANTEED **DEALERS EVERYWHERE**

RED CATALOG, Postpaid - **"Simplifed Beekeeping," Postpaid**

W. T. Falconer Mfg. Co., Falconer, New York

Where the good bee-hives come from

GOLDEN ITALIAN QUEENS

Mr. Beekeeper, do you want the best queens that money can buy? If so, try this strain of Goldens that for fifteen years has been a leader. All queens reared from superior Golden mothers and mated with select Golden drones; are large, vigorous and prolific; the bees gentle and hustlers, and are mated throughout the United States as a disease-resisting strain. Mated from strong nuclei, three to five full Langstroth frames. Safe arrival (U. S. and Can.), purity of mating and satisfaction guaranteed. Write for descriptive circular.

PRICES OF QUEENS

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1.50	$ 7.50	$13.50	$1.25	$ 6.50	$11,50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select untested	2,00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	11.00	18.00

Breeders, $5.00 to $25.

BEN G. DAVIS, Spring Hill, Tennessee

Please mention Am. Bee Journal when writing.

CLOSING OUT SALE

—OF—

BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.35
Danzenbaker Bee-Smoker ($1.00)	.80

GEORGE W. YORK, SANDPOINT, IDAHO

ITALIAN QUEENS

NORTHERN BRED

Superior winterers, second to none. My free list explains it all. Untested, $1.00; select tested, $1 50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents; "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, GLENWOOD, MICH

Get the Atchley Queens

It took 30 years to produce the good qualities obtained in this strain of three banded bees. If you haven't some of this stock in your apiary now, you will have, some day.

Untested, $1.00 each, or $10.00 a dozen. After April 15, 75c each, or $8.00 a dozen. Good tested ones $1 50 each. I can sell you bees or nuclei cheap; write for prices. Satisfaction of all bees and queens guaranteed.

Wm. Atchley, Mathis, San Patricio Co., Texas.

Miller's Strain Italian Queens

By RETURN mail after June 5th to 10th, or money refunded. Bred from best RED-CLOVER strains in the U. S. In full colonies from my SUPERIOR BREEDERS; northern bred for business; long tongued, three banded, gentle, winter well, hustlers, not inclined to swarm; roll honey in. One untested, 75c; 6, $4 00; 12, $7 50. One select untested, $1.00, 6, $5 00; 12 $9 00. A specialist of 18 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, Brookville. Pennsylvania

CARNIOLANS ONLY

Carniolans build up fast in the spring, are very prolific, VERY GENTLE, cap honey very white, enter comb-honey supers readily, and gather almost no propolis, and are the BEST of honey gatherers. Ten years' experience in honey producing and breeding these bees.

Untested queens,	$1.00 each;	dozen,	$ 9.00
Tested	" 1 50	" "	12.00
1-pound package with queen			2.50

Ask for our free paper, "Superiority of the Carniolan Bee."

ALBERT G. HANN, Clinton, New Jersey

SUPPLIES AND BEES

If you need supplies or bees shipped promptly, write us. Our stock is complete. No delays. Chaff and single walled hives. Bees by the pound, nucleus or full colony. Untested queens, $1.00. Tested, $1.25. Catalog free.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

J. W. K. SHAW & CO.

Are still filling orders for queens by **return mail.** Their strain of three-banded Italians is well known. The industry and gentleness of bees, and size and prolificness of queens, show the care taken in breeding. Never a case of foulbrood among these bees Their apiary was established in 1886.

Tested queens, $1.00. Untested queens, 75c; $7.00 per dozen. Also bees by the pound. 1, 2 and 3 frame nuclei.

J. W. K. SHAW & CO., Loreauville, La.

— Porto-Panama Hats —

COOL AS A DROP OF DEW

Hand-woven, soft, durable, comfortable. Good as the South American Panama but cooler, lighter, more dressy. Direct from maker to you $1.50 postpaid State size and send money order. Money refunded if you are not perfectly satisfied. Very stylish for Ladies this year.

MARTIN LOPEZ & CO.
P.O. Box 148 A 13 San German, Porto Rico
Ref.: Bank de Economias, San German.

3-BAND ITALIAN QUEENS

FOR SALE AFTER MAY 1

This stock of bees does get the honey when there is any to get. One untested, 75c; 6, $4.00; 12, $7.00; 25, $12.00; 50 $46. One lb. of bees with queen, $3.00; 2 lbs. with queen, $5.00. All queens are mated and laying before sending out. No tested queens for sale. The above prices must be doubled when sending queens to foreign lands. If queen arrives dead, send it back and get another or the money. No checks accepted in any case. (My former address was Cato, Ark.)

Address, J. B. ALEXANDER
R. R. No. 1, Jacksonville, Ark.

A Nice

1 pound package Italian bees with queen, $1.25; 2-fr. nuclei with queen, $1.50. Shipped C. O. D.

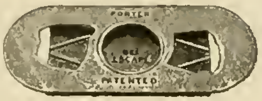
ROSEDALE APIARIES
Big Bend, Louisiana

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill

PORTER BEE ESCAPE



SAVES
HONEY
TIME
MONEY

For sale by all dealers.
If no dealer, write factory
R & E. C. PORTER, MFRS.
Lewistown, Ill., U. S. A.

Leather Colored Italians

About April 1st. I will again be ready to mail untested queens of my fine strain of Italians; I breed no other race. I also have choice tested and breeding queens at all times. Get your orders booked early.

I rear only the kind of queens that are sought for and demanded by successful beekeepers. Get your orders booked early. Cash with order. Satisfaction guaranteed. Untested queens, $1.00 each; $9.00 per doz.; $75 per 100. Choice tested, $1.50 each; $15 per doz. Breeders, $3.00 to $5.00 each.

C. S. ENGLE
Beeville, Bee Co., Texas

NEW ENGLAND BEE KEEPERS

Everything in Supplies
New Goods. Factory Prices.
Save Freight and Express Charges
CULL & WILLIAMS CO.,
Providence, R. I.

Beekeepers' Supplies

Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

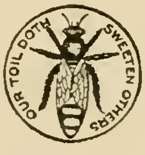
J. NEBEL & SON SUPPLY CO.,
High hill, Montg. Co., Mo.

HONEY LABELS & Printing. Catalog free.
Liberty Pub.Co., Sta. D, Box 4H, Cleveland, O.

Celluloid Queen-Buttons

These are very pretty things for bee-keepers or honey-sellers to wear on their coat-lapels. They often serve to introduce the subject of honey, which might frequently lead to a sale.

NOTE.—One bee-keeper writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of these buttons], as it will cause people to ask questions about the busy bee, and many a conversation thus started wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."



OUR TOIL DOTH SWEETEN OTHERS

The picture shown above is a reproduction of a motto queen-button that we offer to bee-keepers. It has a pin on the underside to fasten it.

PRICES—by mail—1 for 6 cts.; 2 for 10 cts.; or 6 for 25 cts

HONEY AND BEESWAX

CHICAGO, June 15.—There are very few sales of comb honey to report on, but white comb has sold freely at 17@18c per pound. There is no surplus on sale, as receipts are chiefly small lots from parties who have kept more for their home market than was needed.

Extracted is without change; very little being sold Prices on the amber grades range from 5@7c per pound; white, 7@9c per pound, according to the kind and quality. Beeswax is steady at from 30@32.

R. A. BURNETT & CO.

DENVER, June 17.—We have nothing to offer in comb honey, but have a good stock of first-class extracted honey, which we are offering at the following local jobbing prices: White, 8½@8¾c per pound; light amber 8@8¼c, and amber strained, 7@8c. We buy beeswax and pay 28c per pound in cash and 30c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

KANSAS CITY, MO., June 17.—There are a few cases of new comb honey on the market. The demand is good. The supply of extracted is large and the demand fair. We quote as follows: No. 1 white comb honey, 24 section cases, $3.60 to $3.75; No. 2 amber, $3.00 to $3 25. No. 1 white extracted honey, per pound, 7½@8c; No. 2 amber, 5½7c. Beeswax, No 1, 28c; No. 2, 25c.

C. C. CLEMONS PRODUCE COMPANY.

INDIANAPOLIS, June 16.—Practically little doing in the honey line. The demand for extracted honey is little better than usual for this time of year. Comb is dull. There is no change in price since our last report. We are paying 28c cash or 30c in trade for good average wax delivered here.

WALTER S. POUDER.

CINCINNATI, June 17.—Business is not good in the honey line, although the demand is looking up somewhat. We quote No. 1 comb honey at $3 75 to $4.00 per case, and extracted amber at 5½@7c, and white from 8@10c a pound. We are paying 28c a pound cash for beeswax or 30c a pound in trade.

THE FRED W. MUTH CO.

LOS ANGELES, June 18.—The market on California honey at present is about as follows; Comb, white, $3.00 per case; light amber, $2.75. Stocks ample for present requirements. Extracted, light amber alfalfa, 3¾c per pound; light amber sage, 4¼c per pound; water-white sage, 7c; white orange, 7c (new crop). Beeswax, 28c. All f. o. b. Coast.

HAMILTON & MENDERSON.

NEW YORK, June 18.—There is practically nothing doing as far as comb honey is concerned; there being a little demand only for No. 1 and fancy white at prices ranging at around 15c, while off grades are not wanted at all. As to extracted, there seems to be a little better feeling as far as West Indian and new crop Southern are concerned. West Indian is now selling at around 48@50 a gallon, according to quality and new crop Southern, which is now beginning to arrive freely, is selling at around 58@75c per gallon according to quality. Some of the Southern honey is very poor in quality, and of course will have to sell at a lower figure; still, the better grades will bring the full market value. There is no white clover, last year's crop, and what little there is around is selling at around 8c per pound. Beeswax is steady at 30c@31c per pound..

HILDRETH & SEGELKEN.

BEES AND QUEENS

Why not requeen your bees this fall with the best of Doolittle stock? We offer special prices of 75c each; $7.20 per dozen; or $54 per hundred. It will pay you to give this stock a trial.

Spencer Apiaries Co.,
Nordhoff, Calif.

EAT HONEY

Lewis Sections

NOT ONE BAD IN THIRTY THOUSAND

One of our customers tells that he has put up (folded) thirty thousand Lewis Sections in a season, and not found one section in the whole lot that was not perfect.

Can we mention any more convincing evidence of QUALITY?
Can you say the same of even five hundred of any other make?

—MATERIAL—

Lewis Sections are made of Wisconsin Basswood—the best material known for sections. The stock used is first carefully selected by the lumber people, then when it reaches the Lewis factory it is again sorted by the Lewis Inspector, leaving only the whitest material to go into Lewis Sections.

—THE V-GROOVE—

The most difficult part to make right in a section is the V-Groove which allows it to fold up into shape—if it is not cut deep enough or if it is cut too deep, the section will break when folding or will be loose at the corners. The Lewis Section expert has been attending to this part of the work for over thirty years—Lewis sections are perfectly grooved.

POLISHING AND DOVETAILING

Lewis Sections are polished on both sides in a double surface sanding machine, which was designed in the Lewis Plant especially for the purpose. The dovetailing of the ends of Lewis Sections is smooth, clean and just right.

—PACKING—

Lewis Sections are packed in a tight wooden box entirely enclosing contents—no discoloration from air or sun can occur, no matter how long they are carried in stock—this package is strongly braced at all corners insuring delivery in good order.

Insist on Lewis Sections—Look for the Beeware Brand

G. B. LEWIS COMPANY
MANUFACTURERS
Watertown, - Wisconsin

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., JULY, 1915

Vol. LV.—No. 7

EDITORIAL COMMENTS

Our Front Cover

The Illinois State Inspector, A. L. Kildow, is busy trying to clean up foulbrood in Illinois. He is shown on our front cover, holding a comb from a colony badly affected with American foulbrood. See his article elsewhere in this issue.

Minnesota State Fair

The Minnesota State Fair is again making the best offers of any State, as far as we know, in the apiary line. The total amount of premiums offered on honey, beeswax, honey vinegar, bees and queens is $1168.

Cocoons in Old Combs

J. E. Byer, page 194, wonders whether it is strictly a fact that the older the combs the more cocoons they contain. In combs 35 or 40 years old he found the cells as large as in combs only two or three years old. That is as it should be expected, notwithstanding that in some places, especially across the ocean, there are those who advocate renewing combs every three or four years, arguing that otherwise the cells would be too small for full-sized bees. Evidently, however, Mr. Byer has in mind the question, "How can it be possible for the cells to continue the same size if cocoons are constantly accumulated in them?"

Two things will help to an answer. One is that cocoons are exceedingly thin. Another is that the bees are constantly drawing out the walls of the cells, making the cells just as much deeper as required by the filling up of cocoons at the bottom. If Mr. Byer will cut through that comb that is 35 years old, he will find the septum probably an eighth of an inch thick. Even if it should be that the bees clean out part of the cocoon at the sides of the cell, that constantly thickening of the septum proves that it is strictly a fact that "the older the combs of the brood-chamber the more cocoons they contain."

Credit to Whom Credit is Due

In our February number, we published extracts of a letter from our old Swiss friend, Mr. Ed Bertrand. These were reproduced by one of our contemporaries at the antipodes (New Zealand), in their May number, as if the letter had been received by their editor from Switzerland. We are always glad to see quotations from the American Bee Journal in other publications, because it shows that the matters mentioned are interesting, but we believe credit should be given. This was perhaps an oversight.

Prevention of Swarming

How to prevent swarming in the most satisfactory manner is an unsolved problem. Yet it is a problem that sooner or later interests every beginner, and for the sake of beginners it may be well to say something about it.

The size of the hive has something to do with it. A small hive, bringing on a crowded condition in the brood-chamber is likely to urge toward swarming. The Dadants, with their hives of 10 frames 11⅝ by 18½ inches, have only about 5 percent of their colonies swarm.

Heat helps toward swarming, so it is desirable to have hives in the shade. Yet more important than shade is ventilation. A colony standing in the full glare of the sun, with free circulation of air, is better off than a hive in a shady place where there is little circulation of air. I once had a colony standing in shade so dense that the sun never shone on the hive all day long, and one day the combs melted down and the honey ran in a stream upon the ground. There was such a close growth on all sides that there was little chance for circulation of air.

Even with a good circulation of air all about a hive, the hive itself may be so close that the bees will be uncomfortably warm. So a large entrance is desirable, even as much as 2 inches deep by the width of the hive. With so much as 2 inches between bottom-bars and floor some device, as a bottom-rack, must be used in summer to keep the bees from building down. Some claim almost entire freedom from swarming by raising the hive an inch, with blocks under the four corners.

Additional chance for ventilation may be afforded by shoving the super forward or backward, leaving a space of ¼ inch at one end. There may also be ventilation between supers, where more than one are on, and also under the cover.

There is a difference in bees as to their tendency to swarm, so some make a practice of breeding from colonies least given to swarming, with the belief that there may be some approximation toward a non-swarming strain, The age of the queen is a factor; the older the queen the more likely to swarm. It is a very rare thing for an established queen to swarm in her first season. That word "established" must be noted. A queen may be considered established when she is fairly at work laying as the mother of a colony. No matter how young the queen, if not thus established, she may swarm. I once gave to a colony in the humor of swarming a young queen that had begun laying only two or three days before. I think it was not more than 24 hours until the colony swarmed. But as already said, when a queen is fairly settled down to work, there is little danger of her swarming before she has passed the winter. Accordingly some think it wise not to allow a queen to become more than a year old. This has the disadvantage for those who are trying to breed for improvement that one cannot tell which is the best stock to breed from, for a queen cannot show the value of her progeny as storers until she has passed a full season, and she is then likely to be more than a year old.

A colony that has sent out a prime swarm with its old laying queen is likely after a space of some eight days to send out one or more afterwarms. The prevention of an afterswarm is an easier thing than the prevention of a prime swarm, and may here be mentioned. The plan is simple. When the prime swarm issues, hive it and set it on the old stand, placing the old hive close beside it, both hives facing the same way. A week later move the old hive to a new stand 10 feet or more away. That's all; the bees will do the rest. For when the hive is moved to its new stand, the bees will go afield just the same as if no change had been made, but having noted no change, when they return from the field they will go, not to the old hive, but straight to the old *place*, and join the swarm. About this time the young queens will begin hatching, and under favorable circumstances the first virgin emerging should go with a swarm. But the bees seem to feel: "We have lost heavily in numbers, nothing is coming in from the fields, we certainly cannot afford to swarm;" and so the first virgin emerging is allowed to massacre her royal baby sisters in their cradles, and there is no afterswarm.

After all afterswarms have issued, or if there are no afterswarms within about two weeks, then that colony is safe from further swarming until the next year. If, now, we put a colony in the same shape as if it had swarmed, we may feel safe as to swarming, and this is much practiced under the name of shaken swarms. Strictly speaking, this is not prevention of swarming, but artificial or anticipatory swarming, But it has the advantage over natural swarming that it takes place at the convenience of the beekeeper, and not at the whim of the bees. Here is the plan of operation: Just before there is danger of swarming, take away all but one brood, and fill up the hive with empty combs, of course leaving the queen. The brood taken away may be used to strengthen other colonies, or enough bees may be taken with it to care for the brood, and a new colony formed.

There is another plan that is equally adapted to comb or extracted honey. Wait until about the time when there is danger of swarming, and then remove the queen or cage her in the hive. After 10 days destroy all queen-cells and let the queen resume her duties. That will likely end all swarming. The likelihood may be made a certainty if at the end of the 10 days instead of the old queen a young queen is given that has lately begun laying.

J. E. Hand, in a late number in Gleanings in Bee Culture, advocates the plan of removing the queen and at the same time giving a ripe queen-cell. He does not say that he has tried the plan long enough to make sure there will not be too many cases of swarming out, for it sometimes happens that a virgin will swarm out before she begins laying. If that objection does not hold, it would be an improvement, instead of giving a cell, to give a virgin less than 24 hours old, at which age a virgin will be kindly received in any colony. C. C. M.

European Foulbrood

The report of comparative experiments made in Canada and in the eastern United States, published by Mr. Pettit, the Provincial Apiarist of Ontario, in an 8-page pamphlet, confirms the experiments made by the younger Dadants, and published on pages 128–9 of our April number. The Italians resist the disease better than the common bees. However, the conclusion reached by Mr. Pettit is that "resistance is more a matter of vigor than of race or strain." The leather-colored Italians are considered as better than either the yellower strains or the common bees. This, in our opinion, is due to

GLEN S. PLATNER OF CENTER JUNCTION, IOWA, WITH A MAY SWARM the fact that the yellower strains have often been secured by color selection with less regard for other qualities. Mr. Pettit reports the Carniolans as "not generally as good as the Italians." The pith of the entire report is found in the following words from Mr. Warrington Scott:

> "The successful honey producer of the future must keep his queens young and his colonies vigorous. The remedy for the disease is exactly in line with the system of beekeeping that must be followed in order to obtain the highest success even if foulbrood never existed."

Half Swarms

Referring to the explanation given in this number by our experienced friend G. C. Greiner, in reply to the query of W. C. Cunningham, we think the misunderstanding comes from Mr. Greiner's use of the word "swarm" where he means "colony." Mr. Greiner divides his colonies during fruit bloom, as stated in June, 1914. In that number, Mr. Greiner used the terms "divided colonies" and "artificial divisions," which, to our mind, are very much more explicit than the term "half swarm," which literally would mean a natural swarm divided in two parts. With this explanation, we think Mr. Greiner's meaning will be fully grasped. Although the word "swarm" is accepted by the dictionaries as meaning "a hive of bees," it is a misnomer, and should be used only to denominate the bees composing a new colony.

In Spanish

The Langstroth-Dadant "Hive and Honey Bee" is now published in Spanish, "La Abeja Y La Colmena," a translation from the French edition, by M. Pons Fabregue. The publisher is Gustavo Gili, of Barcelona, Spain. The paper, print, binding, cuts, etc., do him honor. It is finely gotten up and comes at the right time, for the two Americas are getting more closely connected than ever before.

MISCELLANEOUS NEWS ITEMS

Attention Iowa Beekeepers! — The Polk County Beekeepers' Association will hold its annual picnic and field meet the second Wednesday in July at the N. J. Harris apiary, about one mile north of Highland Park, a suburb of Des Moines. Arrangements are being made for several good speakers, and a number of demonstrations will be given. This will be a basket picnic, each one taking his own lunch. The picnic is not limited to members of the association nor to beekeepers residing in Polk county. Beekeepers from all over the country are welcome, and a large attendance from outside the county is expected.

F. C. SCRANTON, *Sec.-Treas.*

◆

Many Bees in Imperial County.—According to the "California Home Farmer," Imperial County in California has 22,000 colonies of bees. "The completion of the San Diego and Arizona railroad in the near future will be of material advantage to the bee-keepers of this section. This is significant when it is remembered that this region was a desert only 14 years ago."

◆

Packing Net Weight of Honey.—A word of warning to the beekeeper who is getting his honey ready for the market. Sixty-pound cans of honey should be put up with *sixty pounds net* of honey in the can. According to the interstate laws governing food stuffs, the net weight must be marked on every can also. Added, therefore, to the convenience in having every package of the same weight there is now the fact that this must be so to conform with the law.

This is not only true with extracted honey in all sizes of packages, but it is also true of honey in the comb. Be sure, therefore, to mark each section "Net weight not less than 13 ounces," or whatever weight the grade will make *after deducting the tare of the section.*

Instead of looking on these laws as a hardship, the careful beekeeper should look upon them as a blessing since they will make towards uniform packages and will either drive the careless beekeeper out of the business or will force him to conform with a standard where most of his honey will probably be classed as "cull" in the market.

◆

Study of Honey Flora.—The Massachusetts Agricultural College, through the Botanical Department, Prof. A. V. Osmun in charge, has consented to serve as a repository for specimens of honey and pollen plants from various parts of the country. The study of this subject, especially by the beekeeping press, is fundamentally important, for only by a thorough understanding of the flora can the most successful honey cropping be accomplished. Some seasons one honey plant may predominate; in another season other plants may predominate.

Furthermore, a given plant may yield nectar, as for instance, alfalfa, in one locality and not in another. The reasons for some of these phenomena are not fully understood. It is with a view to determine the range of honey-plants and the locations of their highest efficiency that this Institution proposes to serve the beekeepers.

NEAT, MODEL APIARY OF GLEN S. PLATNER, NEAR CENTER JUNCTION, IOWA.—Colonies wintered in cellar last winter without loss.

In so far as possible, the Institution will assist beekeepers in the determination of unknown honey-plants. Specimens received according to the directions given below, will be filed in a permanent herbarium of nectar and pollen-yielding flora. This collection should become invaluable as a source of reference during years to come.

Beekeepers are, therefore, invited to furnish for this collection, according to the following directions, specimens of their local sources of nectar and pollen.

Plants should be pressed and dried for shipping, as there is always danger that when shipping in fresh condition they will not reach their destination in good condition for preserving and identification.

Directions.—1. Plants for pressing should be in full blossom and should go into the press while fresh.

2. Newspapers may be used as driers if care is taken to change them each day until the plants are perfectly dry, otherwise moldy specimens will be the result. Place the plant between several thicknesses of paper. If the plant is taller than the length of the paper it may be folded over to fit.

3. Use the margins of the newspapers on which to write necessary data, including name of plant—common or scientific—place and date of collection, name and address of collector, and a note of the value of the plant in your locality for honey or pollen. (Extended remarks should be sent in a separate letter, but be sure to refer to your specimens sent under separate cover). It is desirable that several specimens of each kind of plant be prepared.

4. Press papers may be laid on the floor with a board of the proper size on top. On the board place a weight (as stones) of about 35 pounds. Too much weight is not desirable.

5. For shipping, place the folder containing plant and data between pieces of binder's board or heavy cardboard, wrap and tie securely, and label "dried plants," with your name as sender.

6. Address the package to

Prof. A. Vincent Osmun,
Clark Hall,
Massachusetts Agricultural College,
Amherst, Mass.

◆

Bee Meetings Next Fall.—Some time ago a committee was appointed to arrange the dates of next winter's conventions on the circuit plan as far as possible. Several months have been required to arrange the dates to the satisfaction of all concerned. The States joining in the circuit and the dates on which conventions will be held are as follows:

1. Ohio Nov. 26-27.
2. Illinois Nov. 29-30.
3. Kansas Dec. 1-2.
4. Missouri Dec. 3-4.
5. Minnesota Dec. 7-8.
6. Wisconsin Dec. 9-10.
7. Indiana Dec. 10-11.
8. Iowa Dec. 13, 14, 15.
9. Michigan Dec. 15-16.
10. Chicago-Northwestern Dec. 17-18.

From the above dates it will be seen that conventions will be in session continuously excepting Sundays. By this plan, speakers of prominence will be able to attend a number of conventions without inconvenience. If the dates could have been conveniently arranged, less travel would have been necessary by having adjoining States follow each other. Some dates were fixed and the other meetings had to be adjusted to them. It is to be hoped that the circuit plan will prove so popular that somewhat more convenient arrangements may be possible another year. The location of the various State conventions will be announced by their respective secretaries. Some locations have apparently not yet been selected.

Frank C. Pellett.

◆

The "Booster."—The first copy of the "Booster" is out. This is a monthly publication edited by Geo. W. Williams, former treasurer of the National Beekeepers' Association.

In his opening remarks the editor says:

"The policy that the 'Booster' will adopt and strive to consummate, will be to 'boost' the honey business. The scattered locations occupied by the beekeepers and their distinctive psychological make-up, makes this the best way for them, although it may not be the ordinarily accepted system of promoting a product. It can be carried out, and will prove efficient. The honey business as a whole can be and will be 'boosted' by every intelligent, broad-minded, energetic, persistent and organized individual effort."

We welcome the new paper to this field. The marketing of honey is of as much importance as its production.

◆

Inoculating Bee Paralysis in Rats.—C. E. Sanborn, State Entomologist at the A. and M. college, has discovered that paralysis has invaded honey bees in Oklahoma. Dead bees were furnished him for investigation as to their death. He took live bees and infected them with the bacillus of the dead ones and soon they died.

Speaking of this he says:

"In death they showed the same action as bees ordinarily found with paralysis. Their abdomen became distended; their two front feet drawn up against their chests; the four hind feet stretched out sprawling and quivering: the mouth parts extended and quivering, and the head frequently turned to one side."

He took rats and inoculated them, and they were soon distinctly affected though not sufficiently to kill them. This was to see if the germ would have effect on the higher animal life.—Tulsa, Okla., *World*.

◆

Distance Traveled by Bees for Honey.—The "Revue Eclectique D'Apiculture," of which Mr. Prieur, of Poitiers, France, is the editor, has in its May-June number a very interesting article on the extent of the bees' harvest field, from the pen of J. M. Gouttefangeas, the inventor of the "cloistering hive," mentioned some years ago in the American Bee Journal.

Mr. G. lives at the Hermitage of Noirétable, in the mountains of Forez in Auvergne, and keeps bees there. He has for 12 years taken notice of the range covered by his bees. There are large orchards located 2 kilometers (about 1¼ miles) from his apiary, but at an elevation 225 meters (738 feet) lower than his own, with a very abrupt descent. His bees have never worked upon those fruit blossoms, even in very favorable weather. He remarks:

"For 12 years, or since our apiary has been installed at the Hermitage, even in very propitious temperature, at the end of May or beginning of June, when the fruit trees of the hills below are in full blossom, our bees have never visited them. At that time they have ended their harvest on the blueberry (*Airelle*), and they are awaiting the blooming of the raspberry which begins towards the middle of June. There is nothing then for them but the blossoms of the apple, pear and cherry trees, on the lower hills, 2 kilometers away. It is not a long trip, and yet, in spite of warm weather, 12 to 15 degrees C. (53 to 59 degrees F.), and even more, they remain inactive and loaf around their homes. A few of them work upon small flowers scattered in the woods and in the forest clearings. But on the whole they do but little, while their sisters below have a fine work-field where thousands of them are humming."

On the other hand, on the "Pic De Vimond," it appears that the bees of the valley gather nectar, although this is at a higher altitude than the Hermitage. The crop there is on the *Erica vulgaris* (heather). Mr. G. asserts that he has seen bees there from 5 or 6 kilometers (4 or more miles) below.

His conclusion is that bees do not go far down steep hills "from an instinctive fear of not being able to come up again with their load. Up hill, on the other hand, they might go 9 to 12 miles *if the topography of the country is satisfactory*. This restriction is not an idle one, for it may not be possible to establish, upon the distances covered by bees, any universal formula. Much depends upon the circumstances of temperature, locations, seasons, aerial currents, and that is perhaps the reason why our masters have so little studied this question."

It would be quite interesting to have comments upon the above, from observing beekeepers living in the mountains of the United States, whether in the East, the center or the West. To our mind the word "aerial currents," about which so little has been known, contains the solution.

◆

DEATH OF W. T. FALCONER

It is with sincere regret that we inform our readers of the death of Mr.

Wm. T. Falconer, president of the Falconer Mfg. Company at Falconer, N. Y., one of the largest firms handling and manufacturing bee-supplies in this country. His death was caused by heart failure, following an acute attack of Bright's disease. He was a little more than 65 years of age at the time of his death, which occurred Sunday, June 6, and was, until his last illness, a hearty and vigorous man, actively engaged in business and philanthropic work.

THE LATE W. T. FALCONER

Mr. Falconer first entered the bee-business in the late seventies. This business he built up as the years passed. He was also actively interested in several other enterprises, being president of the Guerney Ball Bearing Company, vice-president of the Chautauqua Woolen Mills, and a director in the New York Oil Company. Mr. Falconer was president of his local board of education, had held several city offices, and was much devoted to civic and educational betterment.

Beekeepers generally will join in extending to his business associates and to his immediate family their sincerest sympathy. His sterling worth and his business integrity are too well known to require further comment.

The bee-supply business of which he was the head, will be continued by his associates with the same liberal policy as in the past.

* * *

L. V. France to Minnesota.—Mr. L. V. France, of the University of Wisconsin, has been appointed as Assistant Professor of Bee Culture at the University of Minnesota, to take charge Aug. 1.

Mr. France is the son of the well-known N. E. France, of Platteville, Wis., and he brings with him his father's enthusiasm for the improvement of bee culture in the northwest.

* * *

Conditions in Colorado.—The following is a clipping from a letter from our Colorado correspondent, Wesley Foster, giving conditions up to June 15:

"Feeding bees is being done later this year than is common. The early summer freezes ruined most of the flowers that were furnishing nectar. There is no hope for any surplus honey flow until sweet clover blooms, which will not be before July 10.

"If colonies are fed now (June 16) and kept supplied with sufficient honey for their needs in breeding, we can have most colonies ready for the flow in July and August. Conditions are better in western Colorado, as the freezes were not so severe. The season is at least three weeks earlier in western Colorado than on the eastern slope."

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Flowers as Food

Under this heading is found an interesting article in the American Thresherman and Farm Power, the first paragraph of which is:

"Does it sound like sacrilege or merely absurd to be directed to eat one's flower garden! The idea, however new to us, is not new in some parts of the world, for the people of the Orient have long used flowers as an important part of their diet. Indeed, the fashion is said to be spreading in our own land, and the credit of its introduction is given to Wu Ting Fang, former Chinese minister to the United States. We are told that he taught many a Washington hostess how to make wonderful and tempting flower salads, for though many flowers are cooked for food, they are often preferred, uncooked in salads, as their delicate aroma is thus not destroyed, but serves as an appreciable addition to the dish."

Follows quite a list of flowers used on the table, among them two that bring honey into use, the marigold and the chrysanthemum:

"Marigolds make a very pungent and tempting flower salad. The petals are pulled from the stems and chopped with flaked nuts and dressed with any favorite form of dressing. One with honey in it is particularly good.

"To make this salad select take the largest marigolds and mash them. Then strip off the deep gold petals, and half a cupful of chopped or flaked nuts of any kind to mix well together. Place in the center of a salad dish and garnish the edge with the whole flowers, which makes a beautiful show.

"For the honey dressing use two parts olive oil, one part lemon juice and one part clear strained honey. Beat well together and add at the last the stiffly whipped white of an egg. Salt to taste. If this is too sweet use less honey.

"When one eats one's first marigold salad one may be a little doubtful as to whether one really likes it or not. But even if one really dislikes the flavor, one will invariably learn to like it very much and crave the dish. There is a very delicious sweet after-taste about the flowers that is most likeable.

"The chrysanthemum is used more than any other flower in China and Japan in the making of salads. The petals are pulled from the flower and chopped with nuts and mixed with honey and oil and served either with or without salad greens. The petals have a little flavor which one soon learns to like, and they make an excellent tonic, being slightly bitter. This is a favorite salad of Wu Ting Fang."

In the list are also found three that are of special interest to beekeepers because of special interest to the bees, although one of them chiefly to bumblebees. Note that regarding dandelions we are told: "One should gather the flowers early in the morning before the insects visit them." Pretty certainly that means before the bees have taken from the flowers their toll of nectar.

"The blossoms of the red clover are used as salad. The tiny flowers are plucked from the blossom head and used by themselves with a salad dressing or with some of the clover leaves which have a sharp, peppery taste, and are strongly nitrogenous and therefore excellent for the health.

"Alfalfa and dandelion flowers are in high favor as food. The alfalfa flowers are excellent for the health, as they are so rich in organic salts. The alfalfa plant strikes its roots very deeply into the subsoil and brings up into the flowers the richest supply of mineral elements, albumen, iron, sodium, potassium, sulphur and calcium. It is said that the ladies of the Median court ate these flowers to preserve and increase their beauty. The flowers are also excellent for nervous troubles and debility.

"Dandelion flowers have often been eaten as a salad with the leaves, but of late it has become a common thing. They are one of the greatest of spring tonics. The essence of the plant is concentrated in the flower. It makes one of the best of all flower salads, and one of the greatest things for the liver and kidneys, one of nature's chief medicines. One should gather the flowers early in the morning before the insect visits them. The whole flower may be used or one may pluck out the petals, but almost every atom of the dandelion plant is good to eat, root, foliage, flower, flower stem, petals, all. It is replete with curative and constructive properties, and one need not be finicky in discarding any part of it."

Tooth Paste

Honey is the right thing to change tooth powder into tooth-paste. If you have been in the habit of using the powder you will be pleased to find that the paste knows enough to keep its place without unpleasantly scattering where you do not want it. The Chicago Herald gives the following:

"Tooth-pastes are less wasteful than tooth-powders. You can compound your own if you desire after the following formula: Eight ounces of precipitated chalk, four ounces of powdered white castile soap, four ounces of powdered orris root, 40 drops of oil of sasssafras, 80 drops of oil of bay, and sufficient honey to form into a paste. Once a day the teeth should be cleansed with dental floss. To permit particles of foreign matter to remain between the teeth is to invite decay. Twice a year a dentist should remove deposits of tartar that form about the roots and gums."

Honey in Drinks

When you sweeten a drink, the chances are ninety-nine in a hundred that you use sugar. No matter whether the drink be hot or cold, you ought to know that it is better to use honey. T. B. Terry, whose health talks in the Practical Farmer are read and prized by thousands, gives instructions in that paper for making a cereal drink to take the place of tea and coffee, and says: "Use cream and sugar to your taste. I use extracted honey instead of sugar, as it is more wholesome." Not as a matter of taste, you will observe, but because more wholesome.

You may or you may not like it as well as sugar. You may like honey of some particular flavor, even honey with quite a strong flavor, the less flavor the better. Even if you are so fixed in your tastes that you cannot be persuaded to change from sugar to honey, be sure to let the children have their chance. Not only in their drink but in their food. "Milk and honey" is as fine a combination today as it was 3400 years ago, when the children of Israel were eagerly looking forward to finding it in the promised land. Try the children on a bowl of bread and milk sweetened with well ripened honey.

A Small Apiary in the City of Marengo

The probability is that this time the brothers as well as the sisters will be willing to take a look at this department for the sake of seeing the interesting picture it contains. The little apiary shown is not run by a woman, it is true, but is interesting from the fact that it was taken in the very heart of the little city of Marengo, its owner the pastor of the Methodist church.

BEES ON A CITY LOT IN A TOWN OF TWO THOUSAND

The stone building shown was at one time a church—now a movie show. The children in the foreground were not placed there or coaxed there for effect. It is their really and truly playground, and their position in front of the bees, playing with a cracker-carton, is a fine testimonial to the good nature of the bees. Strangely enough, there is no appearance of bees in the picture, but they were busily flying all the same, and the youngsters paid no heed to them.

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

The Season

In many sections of the country, on account of the lateness of the season, the main honey-flow has just started well, especially is this true of the gallberry region where the prospects are good for at least an average crop. Also out over the poplar belt, which covers the greatest area of our territory, the flow was about as good as usual. We learn that the flow is heavy in the great Blue Ridge belt. In the extreme southern portion of Dixie the flow from orange was light with but few exceptions. One beekeeper reports from this section that he established an out-yard by equally dividing up the 35 colonies of the home yard. They were short of stores at the time he placed them on the stand, but as the main honey plant was well in bloom he thought they would at least gather enough to build up on and live in a hand to mouth manner.

On his next visit he was surprised to find all but three colonies dead from starvation. Just at this time the weather turned cold, cloudy, with high wind and rain. This lasted the greater part of April, and such conditions prevailed nearly all over Dixie. During this time the tupelo gum came into bloom, and the crop from this source was almost a total failure. The writer has 1000 colonies in the great tupelo section, and the average from this bloom is about 10 pounds of extracted honey per colony, but, fortunately, I am not entirely dependent upon this even there, for besides tupelo I have gallberry, pepper bush and saw palmetto, which will help us reach somewhere near the average. But our trade demands this tupelo honey, which will be greatly missed. One beekeeper in the great tupelo belt reports he could only extract four 32-gallon barrels of tupelo honey from 180 colonies, making the average less than 10 pounds of extracted honey, which I believe is the lowest average for many seasons.

We had ideal weather the latter part of March, during which the titi bloomed and gave a good flow, and our greatest honey market is now almost glutted with this beautiful nearly water clear honey, but as it is strictly fancy, and the first on the market, the beekeepers are reaping good returns from it.

Over-Enthusiastic

Friend Byer, on page 158 of the May edition, comes back at me for being too enthusiastic, not using good judgment in making sweeping claims, etc. I guess this is true; for my enthusiasm in beekeeping has never at any time decreased in the least, but it has always risen higher. I am over-enthusiastic, and that enthusiasm sometimes runs

APIARY OF HARRY HEWITT AT LAKE APOPKA IN SEMI-TROPICAL FLORIDA
Saw-palmettos furnish shade from the heat of the sun.

away with my judgment, not as a beekeeper but as a writer. I know no way to put on breaks and stop except to lay my pen down. As for sweeping claims I am not guilty of any beyond facts as they have come up in my own business and under my own observation.

For instance, after the supers had been prepared as well as all other necessary supplies and distributed around to 27 apiaries, consisting of 1205 colonies of Caucasian bees and their crosses, one of our leading apiarists took a cheap helper and performed all the necessary apiary work to harvest a great crop of comb honey, while another one of our apiarists, about equally as well qualified, in charge of five apiaries consisting of 250 colonies of Italian bees, all run for extracted honey, had to call in help to keep down swarming, etc. Therefore, we have great room to be very enthusiastic over the Caucasian bee, and herein lies the secret of my success. But let it be understood that I am not taking a stand against the Italian bees, for they are no doubt good bees for some locations and some beekeepers.

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Moving Bees

Moving bees to out-yards or from one place to another is a job that all beekeepers dread more or less, and is perhaps the most nerve-racking and dangerous task the beekeeper has to encounter, and every one who has done much of it has had some bad experience. I have a horse who is almost earless as a result of an accident while moving bees. This heavy draft horse was stung so severely that it fell to the ground, making the most lamentable noise I ever heard from an animal. The upset wagon-load of bees was backed away from him as quickly as possible, and as soon as we could get the smoker ready we wrapped the horse up in a volume of smoke which drove the furious bees from him. I placed the wagon cover over him and left him in charge of my helper while I ran to a near-by farm house and had a couple of cows milked. With this warm milk I bathed the horse for several hours and soon discovered that he was slowly recovering, and in seven or eight hours he was able to be led back home.

As far as I know he has completely recovered from it with the exception that he lost his ears. The circulation of blood in the ears being completely stopped by the bee stings, they fell off a few days afterwards.

In spite of great preparation and precaution, we have had a lot of sad experiences of this kind while establishing our bee-business, but this was the nearest to fatal. Some accidents are almost unavoidable, but a note of warning sounded will help the careless and unthoughtful to use care about this possibly dangerous operation.

We have moved here and there across the country many carloads of bees, and more than once we have hauled several hundred colonies across the country by wagons into a remote section where it was almost uninhabited. Often the location would be cut off by a large stream, and we would set the hives out on its bank, open them up for a flight, and go some distance to purchase lumber to build a flat and then carry the bees across on it, and on until they were finally placed on the stands of the sought out and prepared apiary site.

When I think back over so much of this experience in the past, it brings a chill of by-gone fear over me, for I cannot see how we performed this great task. It involved many sleepless nights, much exposure and hardship. We are glad the most of this is over, as all we have to do now is to reach out and occupy the near-by territory.

[Friend Wilder gives a remedy for bee stings which is new to me. This is the first time I have read of warm milk being applied in a bad case of stinging. One of the popular remedies is a blanket soaked in hot water. Many recommend ice or cold water baths, and this is probably the most popular remedy, where the irritation and the fever are great.

I had the curiosity to look up remedies recommended at different times in the American Bee Journal. I found: salt, sal soda, honey, soft soap, Labrador tea, alcohol, whisky, ammonia, turpentine, myrrh, bromide of potassium, saltpetre solution, honeysuckle juice, aconite, laudanum, chloroform, raw onion, iodine, belladona, wet clay, tobacco. I stopped at the year 1883, with 32 years more to draw from. But this is enough. Probably each of our readers knows of ten or more still different remedies.—Editor.]

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

Beekeepers' Field Meeting and Picnic at Cedaredge, Colo., June 10

The Delta County Beekeepers' Association held the first field day and picnic June 10, and it was a success in every way. The attendance was large and something like 150 attended. The picnic was a family affair, and the children playing on the spacious lawn were a pretty sight.

Rev. G. R. McDowell spoke on the interest taken in bee-culture and the fact that beekeeping brought the beekeeper close to nature and her workings. Mr. V. A. Phillip spoke on farm beekeeping. The writer spoke on foulbrood control, and Mr. J. T. Hartford spoke on foulbrood legislation. Mr. Geo. M. Eckert demonstrated the water treatment for a foul colony. This method appealed to a number, and it certainly does get the bees off the combs in nice shape.

The picnic dinner was a feast, and was greatly enjoyed. Eighteen gallons of ice cream were consumed during the day. Forty five gallons of lemonade slacked the thirst of the crowd. A happy gathering dispersed about 6 p.m.

A number of new members in the association were secured.

Mr. Gale Patterson, Mr. J. G. Jewel, and Mr. Geo. M. Eckert, and a number of other beekeepers with their wives assured the success of the meeting to the extent that it was practically decided to make this gathering an annual event.

BeeKeepers' Field Meeting and Picnic at Boulder, Colo., June 12

The fourth annual field meeting and picnic, held under the auspices of the Colorado Honey Producers' Association, was held at Boulder June 12. Over 100 beekeepers attended, and 17 automobile loads of beekeepers and their families came from various places in northern Colorado. The program was carried out according to schedule, beginning in the morning with a demonstration of the overhauling and cleaning of a colony for the spring work, by Gilbert Walcher, of Boulder. A. J. McCarty, of Longmont, demonstrated the clipping of queen bees.

The exhibit of the uses of honey in cooking shown and demonstrated by Mrs. Wesley Foster, aided by Mrs. W. P. Collins, Mrs. E. C. Bird, Mrs. W. B. Walcher, Mrs. Ward Foster, Mrs. Frank Rauchfuss and others was the feature of the meeting. This exhibit was the largest that I have ever seen at any beekeepers' meeting. After nearly all the samples of honey cooking had been eaten, the picnic dinner was spread and a pleasant hour was passed.

In the afternoon N. L. Henthorne demonstrated the equalizing of colonies of bees. Mr. A. A. Lyons demonstrated the best colony conditions for the honey flow. Frank G. Rauchfuss demonstrated the use of the Rauchfuss queen-mating box, and W. C. Evans, bee inspector of Larimer county, demonstrated the treatment for foulbrood. The writer was called upon to explain the European foulbrood situation.

After the program was completed an "auto" trip for all out-of-town visitors was conducted through the scenic drives about Boulder.

Only one thing marred the day, and that was the wind which made the program rather difficult in carrying out. This was the best attended field meeting that has been held by the Colorado Honey Producers' Association.

Cooperative Effort

There are so many cooperative associations in operation in the United States that the cooperative idea captures the imagination of many who do not well understand the difficulties. This is as true among beekeepers as elsewhere. Probably four out of five will endorse a cooperative effort, but not over one out of five will go the limit of putting up money to start a cooperative enterprise. It must be understood that all the benefit that can come from cooperation is secured by your efforts linked with those of your associates. If your association can do business on as low margin as the existing agencies, you may succeed, otherwise it will not last.

Probably the principal drawback to an association is that it has not the capital necessary to pay the members for the goods or produce when shipped; the producer having to wait from two weeks to several months for his pay.

The strength of an association is in a saving on the cost of supplies, the low commission charged for selling, and the practical certainty that the producer will get his money, even though he has to wait some time for it.

There are now in operation several cooperative associations of beekeepers in the United States. The Colorado Honey Producers' Association is the oldest and most firmly established, and sufficient has been written concerning it during the past few months, so I will say nothing of it here.

The Idaho Honey Producers' Association, modeled in the main after the Colorado Honey Producers' Association, is still young, but has had a much more rapid growth than the Colorado Association did in its early years. The Idaho Honey Producers' Association, however, has some obstacles to overcome. It is hampered by lack of capital, and probably will be until some of the proceeds from the sales of honey are paid to the members in the form of additional shares of stock. This will perhaps necessitate a different voting plan, as at present one member has equal voting power with every other member, regardless of the amount of stock held. Voting according to the amount of honey sold, or according to the number of colonies of bees held by each member, would probably be equitable.

The new Idaho and Eastern Oregon Association has not been in operation long enough to demonstrate what it can do, but it is not likely to make a failure, as practical beekeepers are in charge and will see the effort through to success.

The Tri-State Honey Exchange of Minneapolis is another going concern that is doing business on a small capital, and has already bought honey by the carload for the Minneapolis trade.

At the National convention in Denver, the National Honey Producers' Association was organized. It is made up of Western producers and of some in the Middle West. A branch store has been opened in Kansas City, and business has begun. Honey from different sections of the country is being blended and put up for the trade. An established honey business was taken over, and a good start has been made. Mr. D. C. Polhemus, of Lamar, Colo., is president, and Wesley Foster, of Boulder, Colo., is secretary. Mr. G. P. Stark, of Kansas City, is branch manager. The directors are J. H. Stoneman, D. C. Polhemus, E. C. Bird, J. C. Bull and Wesley Foster.

Every cooperative association that has made a success has had the services of a number of unselfish workers who were determined to see the enterprise succeed. I do not think any organization in the future will be an exception to this rule of demanding a great deal of willing sacrifice from the officers and directors.

Selling Honey

Almost all of the extracted honey that has been selling in pound and glass jars and tin cans or pails retails for about 20 cents a pound. The retailer makes about 30 percent profit on this. However, the agitation going on in this country for more direct dealing between producer and consumer has changed conditions somewhat. The Farmers' Union has distributed several cars of honey to its members in the West at a low price, something like 7 cents a pound to the farmer, in 5 and 10 pound pails.

Near Kansas City some retailers are selling fine white extracted honey at 45 cents for a 5-pound pail. As long as extracted honey of good color and body can be bought wholesale at 4 to 5 cents a pound, we can hardly expect anything else. If the beekeepers will not get together and advertise, they will pay for the game in lower prices for honey.

As an example of the variation in the price of honey, a lot of fine honey was offered upon a central western market at 5½ cents, and a young man at the same time was selling 2¼-pound cans at retail for 50 cents each.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

No Rain

Since sending the last "Notes" for the June American Bee Journal, the weather in our part of Ontario has been unseasonably cool most of the time and very dry. Bees have done little more than hold their own, and at this date (June 14) clover is opening fast, with prospects of a short bloom unless we get rain soon.

No doubt other sections have had more moisture than we have had here, as it is a rare thing that weather conditions are at all general, in so far as precipitation is concerned. On Monday, June 7, accompanied by Mrs. Byer and one of my brothers, I took a trip to the north yard, making the 90 miles in a half day's run. We found the country even drier than in York county, but on the evening of our arrival we had a soaking three-hours' rain. Then again on Wednesday following we had another hour's rain.

Leaving for home on Thursday morning we expressed the hope that the rain had also visited our own section of country, but we were disappointed when, within 20 miles of the end of the journey, we found dry roads, and on arriving home were told that there had only been a light shower in our absence. A shower may be the making of a honey crop in one place, while its absence may mean a failure in another. Having bees at widely separated localities has lots of disadvantages, but there are also some advantages, one of them being that, as a rule, total failure of the honey crop is not apt to occur the same year in two or more localities.

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Late Flow Helps Weak Colonies

Generally speaking, the farther north one goes to keep bees the later the season for bloom and the later the bees will build up ready for supers. But there are exceptions to this. While our bees in York county went into winter quarters with old bees, owing to the almost total failure of the honey crop last year, at the north yard a moderate flow in August and September seemed to put all colonies in prime condition; at least the way they wintered seemed to point to that conclusion. Anyway, they have built up far ahead of our home bees, and while the latter are mostly just ready to enter the supers now as clover is opening, those at the north yard are nearly all fully occupying a full depth super, and many have the second one full of bees.

With a short, quick, early flow, bees just about ready to enter supers at opening of flow will store little surplus, while if flow is held back by a long spell of bad weather the weaker colonies will catch up to those much stronger earlier in the season. Needless to say I will always give the preference to the early strong colonies, but this year will test the matter out in our case to a surety, as there is fully 10 days difference in the bees in the two localities with little difference if any in the period of clover bloom.

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A New Bee Escape

On page 198 of the June American Bee Journal, I read with interest what friend Crane has to say regarding the new pattern of a bee-escape illustrated on that page. It has several features that will appeal to all who use escapes, but has the the old drawback common to all escapes with solid board between brood-nest and supers to be cleared.

An Ontario beekeeper whose name has slipped my memory, has brought out an escape in which most of the space is made of wire-cloth instead of a board, and with this arrangement the bees are cleared from supers and still the honey is not chilled as is the case with other escapes. So good an authority as friend Holtermann has recommended them, and I was just thinking of having a lot of ours at the north yard changed to this style, when a friend told me that they are not making good, the bees refusing to leave the supers in many cases. If this meets the eye of any person who has used this escape, I would deem it a favor to hear from them either personally or through the American Bee Journal.

◆

Late Frost

A late frost on the night of May 26 did considerable damage to tender vegetables and small fruits in some sections of Ontario. In our own locality no damage was done from a beekeeping standpoint, but at the northern location the basswood buds were frozen. While we depend little upon that source of nectar, yet this year was the season for heavy bloom, so naturally we felt a bit sorry, as prospects looked good for a chance crop from the basswood.

◆

Two Queens in One Hive

Early in May, while clipping queens at the home yard, we found a colony none too strong, with evidence of a failing queen. It was marked accordingly, and on getting a few queens from the South a week later, this hive was opened with intentions of removing the old queen and giving them one just received. Lifting up a comb the old queen (a bright Italian) was seen at once, and within an inch of her was a very yellow young queen that we had not noticed at clipping time. This young queen, while under size, did not act like a virgin, and for the sake of curiosity I closed the hive and let them go. A week later the hive was opened and the two queens were right near one another on the same comb as at the former visit.

At different times we have looked since and always find them there. It is now about five weeks since they were first noticed, and I am rather puzzled at what they intend to do. The old queen is still laying, as I caught her in the act; but while I think this small young queen is mated and laying too, yet I am not real certain in the matter. I first thought she was a virgin hatched too early in the spring for a successful flight, but just now it is all an uncertainty to me.

I have at different times seen two queens in a hive together under supersedure plans, but this is the first time I have noticed such an extended period of companionship of mother and daughter in one hive.

◆

Is It Worth the Price?

Allen Latham has clearly proved that sections can be sent by post—if he couldn't do it, no use of any one trying it. Page 188. But after all is it worth the price? Seems to me that such a bulky package as is positively necessary to insure safe delivery, means so much postage that the scheme will never be a commercial success.

Sumac honey! really the words make my mouth water, as it revives sweet memories of a section given to me at Albany, N. Y., by friend Latham. I brought it home—the rest of the family didn't like the flavor—all the better for me, for I did like it.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Crop Conditions

Extracting in the mountain and foothill apiaries is now in full swing, beginning over a month late owing to the cold, damp weather. It is too early yet to give anything like an accurate report as to crop or price. The sage moth has done some damage to black sage.

Our bloom for honey yield is all coming in at about the same time, which makes it uncertain to figure how long the flow will last. The honey taken so far is light in color and of good quality.

◆

Ripening Honey

So many questions have come in lately as to ripening of honey, whether in cell or tank, that it seems fit to say a few more words on this subject, which always comes up during the extracting season. Especially should beginners be given the right idea about well-ripened honey. There is only one point in favor of extracting honey before it is sealed, and that is the saving of time. This is many times offset by the superior quality of honey left in the hive until sealed. It is a great satisfaction to feel that your honey placed on the market is a finished product about which there can be no complaint either as to its flavor or keeping qualities. Sometimes even the best ventilated tank under a California sun will fall far short of the ripening process conducted in nature's own laboratory—a bee-hive.

I knew of an instance some years ago of a neighbor beekeeper who was a careful man, too, who had some of his last drawings from his tank to sour, while the first drawings from the same tank were good. This was accounted for by the fact that the heavy honey settled to the bottom while the honey still containing some water rose to the top. I believe our young friend George Brown, of Tustin, sounded the keynote when he said in a late number of the American Bee Journal, "Don't sell nectar, sell honey."

◆

Harmonies in Insect and Plant Life

While primarily we work our apiaries for profit, and the commercial side of beekeeping is the one foremost in our minds, is it not well to turn aside occasionally from this view point and consider the æsthetic side of our calling? It is a rest in the busy season to refresh our minds with the curious and beautiful nature, without any thought of gain. One of the most wonderful of these manifestations of nature's harmonies is the adaptation of insect and plant life to each other. The color and odor of flowers is designed to attract insects in order to compel cross-pollenation.

Thus, Divine economy has neglected nothing for the benefit of all creatures from the lowest to the highest. The beautiful markings of the blossom with dots, lines, and other curious markings of a contrasting color leading to the nectaries of honey-yielding plants is a study in itself. Many of these special adaptations are as curious as they are beautiful. One notices this in the long curved lower lip of the white sage blossom, which turns up over the short upper lip closing the entrance completely to the tube of the flower which contains the nectar. This bars the door to the unwelcome guest. When the bee seeks entrance she alights upon this lower lip of the flower, and her weight bears it down, thus opening the flower and holding it open while she sips the nectar.

The sages and kindred plants have thus in the order of evolution developed certain types of blossom which fit them for accommodating the insect suited to their benefit. These groups which have such highly specialized flowers are termed the high-class families of plants by botanists. The mechanical device of opening the petals of the flower where nectar exists, as in alfalfa and many of the clovers, is another wonderful thing. By tearing open the flower one can see just how the "trick" is done, and observe the little projections that fit into pockets. When the bee inserts her tongue, she springs the trap, which causes the stamens to yield their pollen, which is carried by her to other blossoms. This also admits her to the feast of nectar. These are only a few of the brief and interesting sources of pleasure open to the beekeeper besides material gains.

NOTES FROM ABROAD

By C. P Dadant.

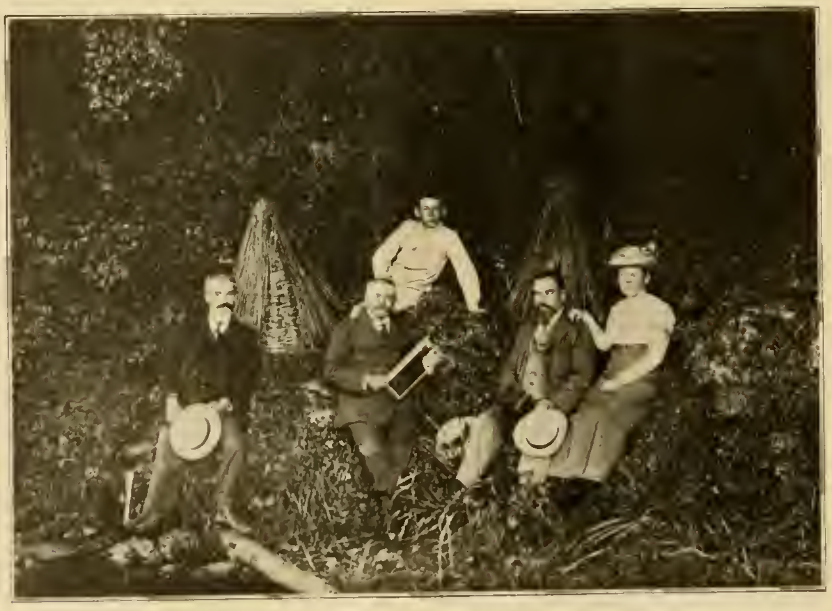
We are nearing the end of our trip. We have already mentioned, in our number of November, the Couterel apiary, at the Pusocq, in Gascony. This is one of the most progressive in France, while just by it are numbers of apiaries, in the heather country, managed by the brimstone method. The old style hives, of which we show two located in a dark nook, at the foot of a bluff, are just wicker baskets, sugar-loaf in shape, coated with cow dung and clay mixed and sheltered additionally with a bundle of rye straw.

In another picture we show an experimental apiary, the hives of which are composed of three Dadant supers. These are 12-frame hives, an experiment of Mr. Couterel. The most interesting feature of this apiary consists in the hive roofs and bottoms made of concrete. The roofs are of asbestos and cement, only about ¼-inch in thickness, very strong and apparently unbreakable, owing to the elasticity of the asbestos. The hive stands or bottoms are of ordinary concrete about 4 inches thick.

In our number for November, 1913, we have described how, in the heather country, the old colonies in wicker hives are brimstoned and the contents sold to a factory. We will now describe the factory.

J. Couterel

On the morning of Sept. 27, 1913, we started with our host, from the village of Barbaste, in an autobus, a "jitney," for Casteljaloux, some 25 miles distant. The road leads through the heather country, the "Landes," described by us before. Passing through several villages and a forest, over a fine road, we reached the little city above named, the former home of the lords of Albret. The factory, of whose main building we give a picture, handles the principal products of the region, the resin of the pines, from which they distil turpentine, and the honey of the heather lands. In addition they make soap and candles. The Usine de Lirac, as this factory is called, employs some 150 persons and covers several acres of ground. We were very heartily welcomed by the manager, whose wife is a practical beekeeper and has movable-frame hives. As he was exceedingly



TWO WICKER BASKET HIVES (BOURNACS) IN SOUTHERN FRANCE
Messrs. Laussucq and Couterel, owners of several apiaries.

Bouquet Tendered Mrs. Dadant at the Bordeaux Banquet

THE HONEY-HOUSE AT THE HEATHER APIARY OF COUTEREL & LAUSSUCQ
Notice the wire fence with a concrete corner post

busy himself, the lady volunteered to show us through the factory.

We will not spend any time describing the buildings in which tallow, stearine, ceresine and paraffine are purified or made into soap and candles. Of course beeswax is also used in making the candles, but we were informed that there are no longer any pure-wax candles made. When I was a child, the Catholic churches would not use any candles but those made of the pure wax from the honey-bee, for church consumption.

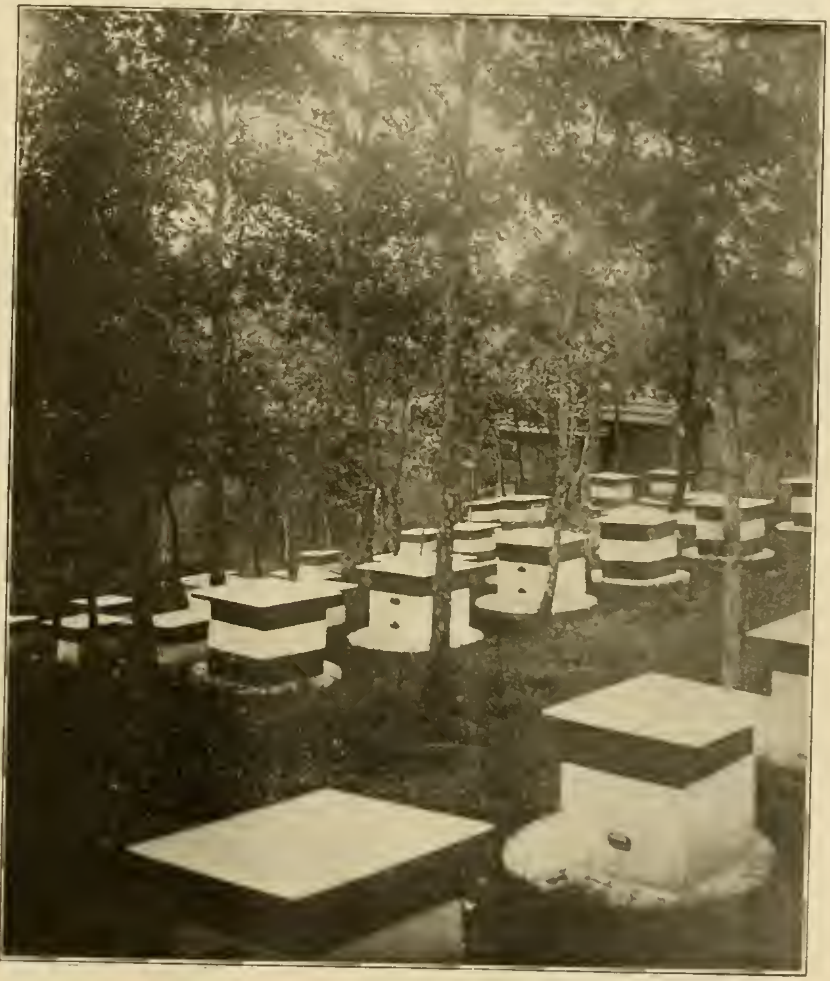
Modern discoveries have brought a change in the regulations, and it appears that only about 40 percent of the sweet-smelling product is required at present in the finest candles. I am not divulging a trade secret, but stating a commercial fact. But is not electricity still better for church lights? That frightful power of lightning which was at one time considered as the manifestation of the anger of God, and which was on the contrary one of the finest gifts from the Deity to man, is surely the proper light for solemn ceremonies.

The honey and wax department of this institution is unlike anything we had ever seen. They had no stock on hand at the time, for the honey and wax rendering is all done in November and December. It is at that time that the bee owners of the Landes brimstone the colonies which they do not wish to keep. After the bees have been killed, the willow skeps containing the combs heavy with honey are brought to the factory and lumped at a price which nets the producer an average of $2.00 per colony. The contents are cut out, dumped into a large press and the honey drained out. The wax is then melted in a vat and run into cakes. So their honey building contains very little machinery outside of several large steam vats and presses. During the previous year they had handled some 600,000 pounds of honey and about 55,000 pounds of beeswax. This honey is very strong in flavor naturally, since it is almost exclusively from heather and more or less pollen is mixed with it during the process of pressing. It sells mainly to German exporting houses. I am told that much of it is used by those houses for "miel de fantaisie" (manufactured honey), in which strong-flavored honey is needed to flavor the cheap glucose of commerce. There is a movement on foot in France to forbid the use of the word "honey" for anything but pure honey, and that is emphatically right.

In the production of wax from this rendering of skeps, I learned that the yield of rich hives, heavy with honey, is about 5 percent of the total weight, in beeswax, with about 15 percent of waste, the rest being honey. Spring purchases of combs from dead colonies yield from 35 to 50 percent of wax. This is probably mainly new comb and entirely dry, for the combs of very old colonies yield a less amount than that.

They also bleach wax, by sun exposure. Beeswax from heather combs bleaches readily, while there is much other wax which persistently retains the yellow, red or brown shade. Such is the wax from the Mississippi valley which is very difficult to bleach.

These people were charmingly entertaining. They had expected our visit and had a royal lunch ready. Here for the first time we ate of a renowned

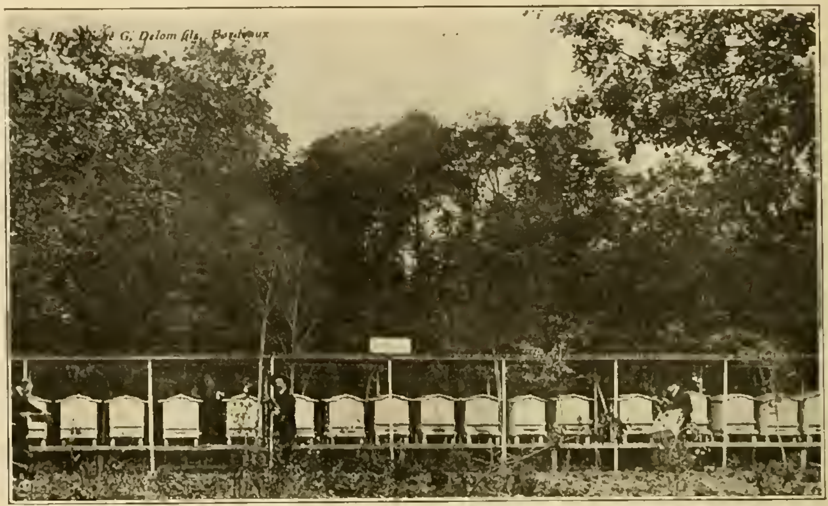


HEATHER APIARY OF COUTEREL & LAUSSUCQ
Thin asbestos-concrete roofs and concrete stands for the hives

dish of old Europe, ortolans, very small birds, as plump and round as quails. Then we were shown about the little city, which is replete with relics of olden days. It suffered a great deal from religious wars during the early days of the Reformation, but its fortifications were finally razed by order of Louis XIII, in the 17th Century.

We went back to the Pusocq late in the evening. The next day, which was Sunday, the president of the Gironde Association of beekeepers, Mr. Lataste of Bordeaux, and two other local apiarists were invited to spend the day with us. After discussing bees and doing honor to a fine lunch. in which two special honey dishes were served which had been prepared by our host himself, we took a stroll in the woods and visited the hunters' blind, the ring-dove traps. The European wild pigeon or ring-dove (*Columba palumbus*) is still plentiful in many parts, having been protected in its breeding haunts. Every fall they pass in large numbers and are baited and trapped among the pines of the Landes. Had our people been less predacious, the clouds of wild pigeons which used to migrate through the United States twice a year might still be in part existing. But there are none left.

The following day we went to Bordeaux, accompanied by Mr. Lataste. This was to be the last of our meetings with beemen. The invitation had been extended to us a month previously. Bordeaux is an old battle field of progressive beekeeping. The "Rucher Du Sud-Ouest," published years ago, under the management of the departed Mr. Drory, had often engaged in argument with L'Apiculteur, of Paris, in the seventies, in favor of the new systems. My father had taken sides with the former. Although many of the old champions have disappeared from the field, after helping win an inevitable victory, there are still men living who remember the contest. So we had a most hearty welcome among these veterans. A banquet had been provided, in a private club house, in a small park of the suburbs. A monster bouquet of roses, carnations, tuberoses, gladioli and asters was presented to Mrs. Dadant, with a neat speech by the president, which brought moisture to her eyes, so unexpected was the compliment.



THE BROUSSEAU BOTANICAL APIARY NEAR BORDEAUX

Bordeaux has a quarter of a million inhabitants, and contains many things of interest. We had only a glimpse of them. We visited several apiarists, among them an elderly lady, the daughter of one of my father's old friends. She still continues beekeeping, and we exchanged reminiscences.

At the apiary of Mr. Brousseau, I was shown a movable-frame hive with frames rounded at the bottom in imitation of the shape of a bee cluster. The nearest practical hive that I have seen to this ideal is the patent hive of Dr. Tonelli, an Italian, the man who invented the original steam-heated uncapping knife. Mr. Brousseau cultivates hundreds of exotic honey plants in his garden. It is a botanical apiarist garden of great interest.

In the afternoon of the second day, in company with a most entertaining and intelligent young priest, we went out of the city to visit the most celebrated vineyard of Bordeaux, the Haut-Brion. They were harvesting the grapes. The quantity did not compare with similar crops which we had seen in California, but whereas the California grapes sell for wine at $10 to $14 per ton, the wine of this vineyard was engaged for ten years ahead at a price which would represent about $1400 per ton for the grapes. Although we tasted the wine, I acknowledge that its high value was unappreciated by me. I belong to the uninitiated in this line. In Bordeaux such a lack of taste amounts almost to a sacrilege.

The last apiary we visited was that of the president, Mr. Lataste. He has a large industrial establishment in the suburbs and keeps his 40 or 50 colonies in the backyard. He is proving by facts that one can produce large crops of honey in the outskirts of a large city, even in as thoroughly cultivated a country as France. He uses ruberoid for honey-boards and also for hive roofs. But the best roof I have seen is the asbestos-cement roof of Couterel, mentioned above.

On the morning of Oct. 1, we took the "Limited" for Paris and sped towards that city at 55 miles an hour. At Poitiers, or about half way, we had a ten minute stop. We had wired the hour, at his request, to our friend Mr. Prieur, editor of the "Revue Eclectique," whose portrait has been published in our May, 1913, number. We recognized him at once in the crowd at the station. His pockets were bulging with sundry articles, local views and samples of different sorts of honey candies, which he compelled us to accept. The candy was excellent, and I managed to preserve a quart box of it for the meeting of our National Association at St. Louis the February following. I believe it was appreciated. I have secured the recipe and will give it at some future time. The ten minutes were soon spent, and we sped away once more, after a hearty handshake. We landed in Paris shortly after dark.

Another letter will conclude our

Au Rucher de l'Oseraie
Culture intensive de l'Abeille MIEL, CIRE et DERIVÉS
GUIGNARD & QUINTAA Apiculteur
MARMANDE (L.-et-G.)
Photo

AN APIARY NEAR BORDEAUX, FRANCE

voyage, to the relief of our patient subscribers, some of whom were kind enough to praise this lengthy narration.

441. CASTELJALOUX L.-et-G — Usines de Lirac
Dupin et J. Castex, éditeurs, Casteljaloux

CENTRAL BUILDING AND OFFICE OF THE HONEY AND WAX RENDERING ESTABLISHMENT

CONTRIBUTED ARTICLES~

Efficient Production of Extracted Honey

BY G. W. BERCAW.

THE following method of production of extracted honey has been found by us the most practical for California. This plan may not work successfully in colder countries, but it is the best for our California climate.

When the rainy season commences, put a full depth super over the brood-chamber, provided with full drawn combs. This will be filled with brood and honey as the case may be, as the queen has access to both parts.

About three weeks before the heavy honey flow begins, when the hives are boiling over with bees, raise the upper story and put a queen-excluder between the two bodies. Then take each frame of this upper story and shake in front of the hive or in some way make sure that you have the queen in the lower story below the excluder. When the heavy flow comes on, the brood will all be hatched out of this upper story, and it will be filled with honey about once in every ten days, as long as they don't swarm and the honey flow continues. Perhaps it will not be all capped over in this short time, for they will do as nature has taught them and the capping depends upon the weather conditions and the rapidity of evaporation. If the capping is slow and honey appears to come in fast, give them an additional story.

When putting on the excluder it is a good plan to examine the lower story for drone-comb and put it in the upper story as much as possible. Notwithstanding this, some drone-comb will be built in the corners or other vacant places in the brood-chamber. When the drone-comb is removed it may be replaced, if necessary with sheets of comb foundation. This lies entirely with the judgment of the apiarist.

By following this method you get a very strong colony of bees at the right time, which is the solution of getting a good crop of honey. But keep the queen below at all hazards; there will be room enough below from the brood-nest to supply young bees, and the bees will not crowd it with honey if there is sufficient room above.

If there are drones in the super they may be allowed to escape by raising the cover slightly, or they would die and fall on the queen-excluder. These drones may be needed where young queens are mating more or less every day.

This plan of manipulation takes a great deal of time if yards are large and extensive, but if the beekeeper expects a crop, it is work, work all the time. He gets out of it in proportion to what he puts in, just the same as any farmer gets from the soil in proportion to his work.

Here, in California, there is very little time but the bees can fly and our crop extends over many months, though some are more productive than others.

Queen-excluders should be used in the production of extracted honey, as this is the only way in which the queen may be kept away from the supers. Where brood of any age is allowed in the extracting super, good, clean, edible honey cannot be expected. But the excluders should not be kept on during the winter months, so the queen may have full access to the entire hive until the proper time comes, the following spring, about 21 days before the opening of the honey crop. Then as fast as the young bees emerge, the cells will be filled with honey.

Your bees should be of good stock, or you must make them so. Requeen every two years, a proportion each year, say in a yard of 200 colonies, requeen 100 each year. Rear your own queens or purchase them. At all events keep good, vigorous stock. We prefer the 3-banded leather-colored Italians. They are more or less immune to disease.

I have written these few lines, assuming beekeeping on a commercial basis. It will apply to large or small beekeepers, even to those who have only from 25 to 50 colonies.

Glendale, Calif.

[The above method is certainly very rational, and with modifications according to climate, may be applied to our eastern and central States.—EDITOR.]

Smoke Introduction Not New

BY MAJOR SHALLARD.

IN your editorial for December, 1914, you say you will postpone further discussion on smoke introduction until a season's work has given further chances for experiment. The system has passed the experimental stage, as I have been using it for the last 30 years. As far as I know I was the originator of it, but perhaps some other fellow will bob up and claim priority.

It is a sure system based on a sound theory, and I have no hesitation in removing an old queen and dropping in another at the same time no matter how valuable the latter may be. If you take an unbroken colt from the bush, one that has never been handled, and which would under ordinary circumstances kick the stuffing out of anything, you can quiet it by tying its head to its tail and running it around a few times. The colt gets giddy, "don't know where it is," and you can put it into a light buggy and drive away quite safely. So it is with the bees; they have a queen and you remove her and drop another into her place. They immediately ball the new one. You close the hive and drive the smoke in at the entrance, and in a few seconds they are too busy rubbing the smoke out of their eyes to bother about anything else.

You get them into a state of not knowing where they are, and when conditions become normal again they are so overjoyed to find they have a queen that there is no desire to ball her. Besides, the whole caboose, bees, queen and hive smell alike.

The system will not work with leaky hives, as I had a lot of trouble two years ago introducing into such hives. The bees would boil out, and in one case the queen boiled out, too; half the bees from the hive, and the queen swarmed on to a tree. You can do practically anything with bees if you throw them off their base.

S. Woodburn, N. S. Wales, Australia.

A Few More Words About Half Swarms

BY G. C. GREINER.

IN the March number of the American Bee Journal, page 101, Mr. W. C. Cunningham says: "But I hope he will tell through the Journal about half swarms, page 21.

If Mr. Cunningham will read over again that paragraph in which half swarm is mentioned also the instalment of "Doubling the Yield of Surplus Honey," in the June (1914) number of the American Bee Journal, page 206, I think he will understand without any more explanation the theory of my half-swarm management. However, a few more thoughts, perhaps some repetition of what I have already said on the subject may make it a little plainer.

The term "half swarm" is my own invention. According to the rules of mathematics, any number (or object) divided by two is termed "one-half." Thus, when I divide a swarm, making two out of one, each half must be a half swarm, which it really is at the time the division is made. Adding a laying queen, a hive full of brood-combs, and applying proper management, which builds these two halves up to strong colonies for the white clover flow, does not change their origin of a few weeks ago, so that the term half swarm, even if applied any time later, is not entirely illogical.

The main object of this part of my method is, as I have plainly stated before, to control swarming and increase the yield of surplus honey. I do not dispute that "rousing big" colonies will frequently give enormous yields (this I know from my own former experiences), but, under like conditions, my two halves will give more than any one of the undivided ones. If I kept the two halves together as one big swarm, nine times out of ten, I would have to spend my time hiving bees or waste precious time to prevent it, instead of managing section supers and extracting honey. This is one feature of my methods that enables me to double the yield of surplus and not be annoyed by the swarming capers of our pets. They are not very strong during the honey-flow, but that is my aim; they are just in the right condition to expend all their energy and ambition in honey gathering, and let those "rousing big ones" manage the swarming.

After saying so much in favor of my half-swarm system as a means of increasing our surplus honey, I deem it advisable to caution our young beekeeping friends against possible disappointments by also giving my views on the old orthodox strong-swarm theory, which we have petted these many years.

Although my new method seems to work along different lines, I still believe that one strong colony will give better results, will produce more surplus honey than two weak ones, and I make it still stronger, one strong colony is worth a dozen of the other kind during a honey-flow. Our success or failure depends all upon the way we understand the terms weak and strong. Both are relative expressions, and must be taken as they are meant.

If we should divide the strongest colony that ever existed in a common beehive at the beginning or during a honey-flow, expecting to double the yield of surplus honey, our expectations would undoubtedly be crowned with complete failure. At best we would have two weak colonies instead of one strong one. But I do not propose or advocate any such management. My divisions are made about May 10 to 12, and the white clover flow begins in this locality about June 15 to 20. This gives me from five to six weeks to build up the two halves to fairly good swarms, and why should they not be able to produce more surplus than the original one swarm, if left undivided? They have the same laying queen, the same number of bees, all the brood they had before the division was made, and with the addition of increased facilities, such as queen, hive, combs, etc., it would be strange if under the judicious management of the beekeeper results were not increased also.

However plain and simple as my method is from beginning to end, it may require some experience for the beginner to succeed in all its different lines.

La Salle, N. Y.

APIARY OF G. C. GREINER, LA SALLE, N. Y. HIVES ARRANGED IN GROUPS FOR WINTERING

More About Swarm Prevention

BY C. F. GREENING.

ON page 171 of the American Bee Journal for May, "Pennsylvania" wishes to know how the "Greening" method will work with comb honey. I will say about the same as in raising extracted honey. Simply use sections *open top* as well as open bottom, giving the bees a chance to pass to the top of the last super, which must be of frames, not sections, and it must have the brood the same as in the extracted method.

Being an extracted honey fiend, I have not demonstrated the comb raising extensively, but have had no trouble thus far, and no swarms. I do away with the super of frames directly above the hive, and have had the queen lay in the sections, say three or four of them, which cuts no figure, as I extract the honey from them after the queen has retired to the hive after the main honey-flow is over.

The above method I do not guarantee, as I have not practiced it thoroughly yet. In using open top sections, the way to the top is not as direct as with frames, hence the bees would not always work as thoroughly to the top as with frames, and the colony might be more apt to get the swarming fever. I shall test it thoroughly this season and report.

In Dr. Miller's answer to "Pennsylvania's" questions, he rather doubts my plan, giving as a reason "too much room before honey-flow." I will try and explain that point. I aim to have my colonies strong when I put them in winter quarters, with plenty of stores and plenty of *ventilation*, but not *draft*, leaving the whole entrance open except wire cloth to keep the bees in. On top of the hive I place four to six thicknesses of burlap, which takes up the moisture, and use no covers. With my bees as near 40 degrees as possible, the hive and super are not too much room, provided we use a canvas or cotton cover in addition to the hive cover when we take them out of winter quarters, and I keep the canvas on until the honey-flow. I have them on at this date, May 8, and shall keep them on until white clover blooms.

On April 5, when I took my bees out of their maple leaf winter quarters, I found several colonies with three to five frames of brood in all stages and scarcely any dead bees. At this date my bees are ready for the honey-flow. When that begins, I at once lift the first super and place at least one, or perhaps two under it, and let them go to work. No watching for swarms, but just see that there are bees hatching at the top, and plenty of room between that and the hive– that's all.

If the queen lays in the first super all right; by the time I extract there is little brood there, as I have robbed it for brood to place at the top several times during the flow.

A little judicious feeding is done early in spring, using old tough combs and pouring thin honey in a small stream on the cells; the honey will all run in, and if placed in the super in the evening, it is cared for before morning, and no robbing occurs. This, with keeping them well quilted until hot weather, stimulates brood-rearing.

Another point not practiced by many beekeepers is this: Plenty of water right at home for your bees. A washtub nearly filled with water, and an inch of cork chips on top, that you can get from your fruit men, chips that come from Italy in kegs of grapes. Your bees do not have to go half a mile for a cold drink, but have it right in the yard; no chilled bees lost in their long flight, and not a drowned bee. The tub will be brown with bees on a hot day, and they learn the place, just the same as stock go to the water tank to drink. I know we save thousands of bees by my method. Try it and see.

By keeping our "think tank" busy, and when puzzled trying to study out a remedy, we often run against some good things. Thus I have found it in the 40 years of my beekeeping.

Grand Meadow, Minn.

[Mr. Greening says: "You rather doubt my plan, giving as a reason 'too much room before honey-flow.'" Beg pardon, you are putting things together that I didn't put together, and that don't belong together. I said, "It seems there might be a little too much of a good thing by giving so much room over the brood-nest for the bees to keep warm before tbe honey-flow.

That had no bearing on the case as to any difference between sections and extracted honey, and certainly it was no objection to the plan in general as a prevention of swarming, for the more room the less inclination to swarming. The only point in the case was that with so much space overhead to keep warm the bees would not build up quite so rapidly.

The only thing upon which "doubt" can be based, Mr. Greening must have found in these words, "All I say is that I should not have faith enough in the plan to give it a trial for comb honey." I said Mr. Greening did not say how he adapts his plan to comb honey, and as I now understand him he does it by using *open-top* sections. That doesn't give me any more faith in it. A number of times I have tried brood over sections, and every time the capping of the sections has been darkened by what I suppose to be bits of dark wax carried down from the brood-combs. Mr. Greening says he has not practiced it thoroughly yet, so he may not have noticed this darkening. If he can produce faultless sections in that way, his bees must do differently from mine.

Cork-chips for the bees watering place are excellent. The plan was given in the American Bee Journal a few years ago, and will be found also in "Fifty Years Among the Bees." I know of nothing better; but for those who cannot readily obtain cork-chips Arthur C. Miller's plan of using pieces of old comb may serve equally well.—C. C. M.]

No. 7.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(*Photographs by the author.*)

THIS number continues the consideration of the early sources of nectar and pollen, which occupied our space in the June issue. A location near a considerable area of forest land, especially if the variety of trees be large, will insure plenty of pollen for early brood rearing, as a great many different forest trees contribute to this end.

BLACK WALNUT.

The black walnut (*Juglans nigra*) is a well known forest tree in the eastern United States. Its usual range is from Ontario and New England west to Nebraska, and south to Florida and Texas. The wood is very valuable for the manufacture of gunstocks, furniture, etc., and is becoming somewhat scarce. The tree leaves out somewhat later than most forest trees, not developing its full foliage until May or June. Fig. 31 shows the pollen-bearing blossoms. These blossoms are long catkins borne on the wood of the preceding year. The blossoms appear before the leaves. Quantities of pollen are produced, and, at times, the bees seek the trees in such numbers as to make a continuous roar. The walnut blooms after the maples and willows, and is not as valuable as ealier blooming trees, because it comes at about the same time that the dandelions are in bloom. May is the month of blossoming in most northern localities.

The white walnuts or butternuts of the eastern States, and the English walnuts, Japanese walnuts, and California walnuts grown in the warmer parts of the country, especially in California, are relatives of the black walnut, and probably equally valuable for pollen.

OAK (*Quercus*).

There are said to be about 250 species of oaks, which are widely distributed over the northern hemisphere. Some species are to be found in nearly all sections of North America, Asia and Europe. Like the walnut, the oak trees produce pollen freely, and they are thus of some value to the beekeeper in furnishing this food so essential to early brood rearing.

Figure 31 shows the pollen-bearing blossoms of the red oak (*Quercus rubra*), which is a common tree from Canada to Georgia, and west to the Missouri river. Oaks are the predominating forest trees in many of the south central States. In Alabama 24 species are recorded. Iowa boasts of 15 species. The list of forest trees which furnish pollen might be extended

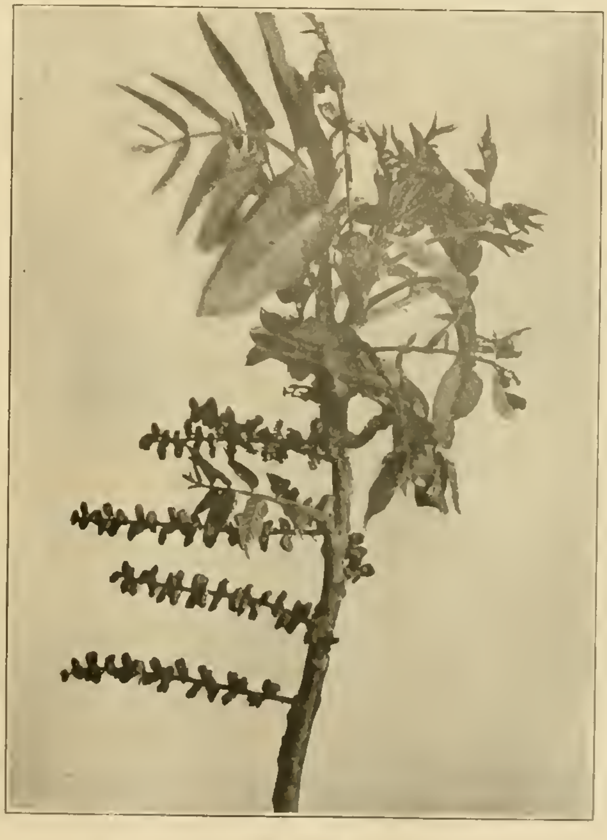


FIG. 31.—POLLEN-BEARING BLOSSOMS OF THE BLACK WALNUT

indefinitely, since most of them furnish some pollen. Enough have been considered, however, to do justice to the subject of pollen producers. Those which produce nectar as well as pollen, are worthy of special consideration.

DANDELION.

The dandelion (*Taraxacum officinale*) is one of the most widely distributed plants in America. Originally introduced from Europe, it has been naturalized over practically the entire continent. As each plant will produce hundreds of seeds, which are borne for long distances on the wind, its wide distribution is not surprising. The plant is sometimes used for medicinal purposes, serving as a mild laxative and tonic. The tender shoots are very popular as a table delicacy in early spring, with those who are fond of greens. The bright yellow flowers are very showy, and if the plant was not so abundant, would be considered attractive. The warfare against the dandelion of the lawns is as relentless and as continuous as the campaign against the house-fly. Little is to be accomplished by digging the plants from one's own lawn, when a whole pastureful are going to seed a mile or two away.

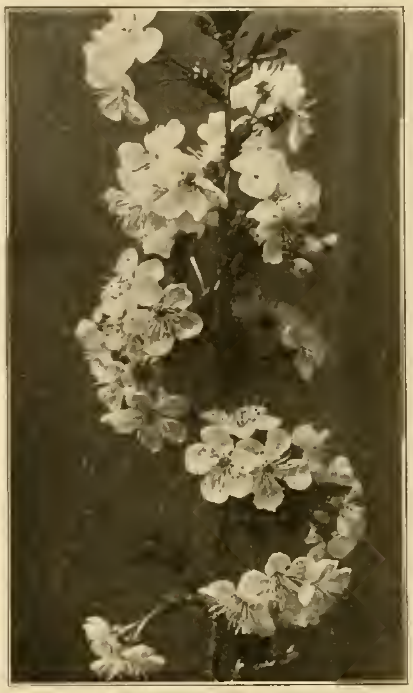


FIG. 34.—CHERRY BLOSSOMS

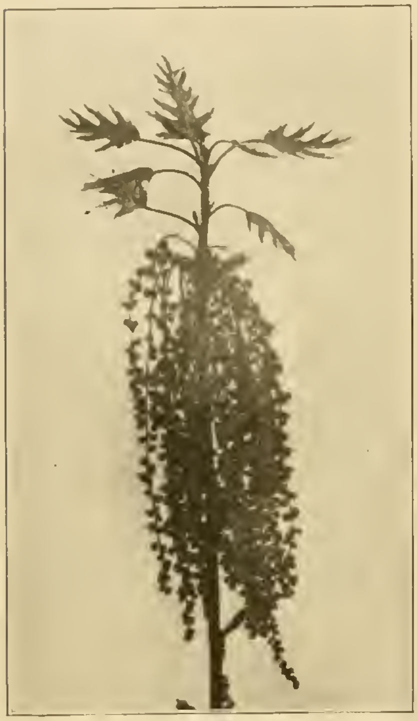


FIG. 32.—POLLEN-BEARING BLOOM OF THE RED OAK

The beekeeper has little to complain of from these weeds, as there is nothing of greater value during the short period of bloom. While the honey gathered from dandelions is dark and strong, most of it will be consumed for brood-rearing. Occasionally a small surplus will be secured from this source, but it blooms so early that surplus is unusual. Large quantities of pollen as well as nectar are produced, so that a large acreage of dandelions within reach of the apiary is much to be desired. Figure 33 shows the plant as it appears during the period of bloom, with blossoms and unopened buds.

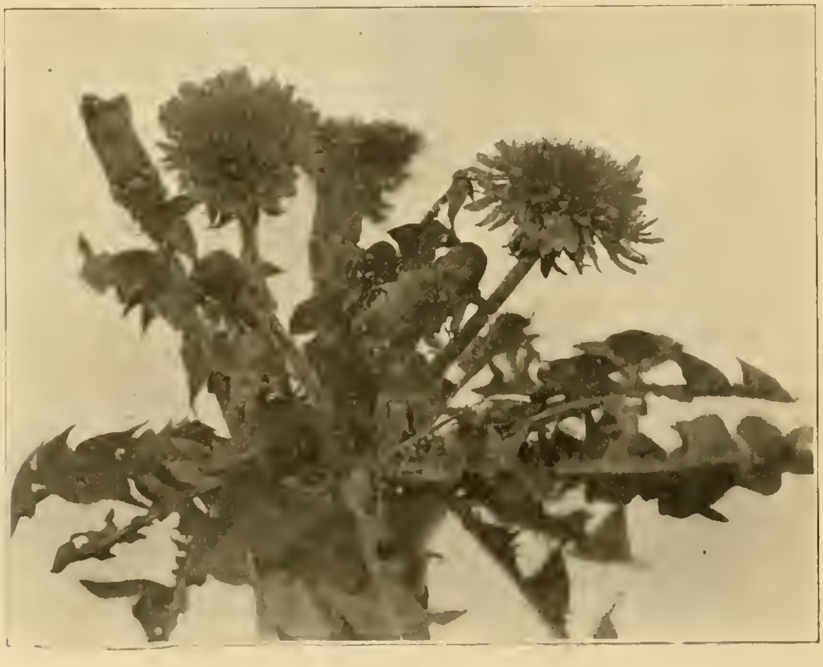


FIG 33.—DANDELION

Hon. Eugene Secor, the beekeeper's poet, has written a number of things regarding the intimate relation existing between bees and flowers, and for one of these, the dandelion furnished the inspiration:

> "Here's a bee, my children see!
> Gathering sweets for you and me,
> On Sir Dandy Lion's crown;
> She is yellow that was brown,
> Yellow with the golden dust
> Lent to her in solemn trust;
> Blossoms bart'ring gold for gold,
> Through this dusty trader bold,
> Dandy Lion seeks a bride,
> Sends his offerings far and wide
> With his trusty friend the bee,
> And with honey pays the fee."

THE ORCHARD FRUITS.

The orchard fruits are too well known to require extended considerations. While pictures of the blossoms of the various fruits are interesting and attractive, they are of no value in assisting the beekeeper to recognize the source of the honey, as he is already familiar with the blossoms of such trees as apples, peaches, pears, cherries and plums. Figures 34 and 35 show cherry and plum blossoms for

FIG. 35.—PLUM BLOSSOMS.

their attractions only, and not because we feel that they are needed.

The beekeeper who is situated near large orchards is fortunate, indeed, as is the orchardist who is situated near a large apiary, for their interests are mutual. Practical fruit growers no longer question the value of the bees in the pollenation of the fruit bloom, and beekeepers are frequently offered some inducement to locate near large orchards. If the weather is favorable during the period of blossoming, the bees will gather considerable honey from the orchard trees. As a single tree will produce thousands of blossoms, a large apiary would be required to make use of most of the bloom. Unfortunately, the period of blooming is very short for any single tree, but if the orchard is composed of several varieties the time will be lengthened somewhat.

In some instances, beekeepers feel that they have suffered losses from the poisoning of the bees from spraying while the trees are in full bloom. There is a difference of opinion as to the extent of injury from this cause. The tendency of leading horticulturists is to discourage spraying while the trees are in bloom, not only because of danger to the bees, but also because the pollen grains will be washed away, and the set of fruit reduced as a result.

Atlantic, Iowa.

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Use of Honey in War Times

IT has been our purpose to insert nothing in this Journal that may be construed as casting reflections upon either side, in the conflict which is devastating Europe. But the letter which follows, contains useful hints. The writer, being among the combatants, will be readily forgiven for using forcible expressions. In all fairness and justice we must say that similar complaints have come from the other side. A letter received, at the same time, from a German correspondent, describes alleged wanton destruction of apiaries and seizure of honey in eastern Prussia by the Russians. However, the wrong committed by one side does not excuse the other's evil doing. Vandalism is never justifiable.

But in this horrible conflict, where the worst in the meanest men's natures is brought to light, can we not find a ray of hope? In another number we showed what great devotion has been exhibited under the Red Cross flag. Remember—

> "Men's evil manners live in brass;
> Their virtues we write in water."
> —*Shakespeare.*

The author of this letter, Lieut. Alin Caillas, is the capable Paris chemist, who, a year ago, on page 93 of the American Bee Journal, began a series of articles on honey and its adulteration. The sudden death of his father, E. P. Caillas, mentioned on page 189, June, 1914, then the war, caused the interruption of his essays. We hope a speedy termination of the dreadful contest may permit his return to peaceable occupations, and the continuation of his contributions.—EDITOR.

"AT THE FRONT, IN THE FRENCH TRENCHES, JAN. 30, 1915.

"*Dear Mr. Dadant:*—About a year ago, I had begun with great pleasure some contributions to the American Bee Journal. From letters received I had cause to believe that my contributions were appreciated by your readers. But, alas! this horrible war which is rending Europe has upset my fine projects. I was compelled, as many others, to drop the pen and the bee smoker for a sacred duty, that of chasing the invader from our native land. It is a harsh task, as you have learned by the papers. Yet the worst pictures that you may see can give you only a faint impression of our enemies' ideas of modern war. It is a merciless fight which has devastated Belgium and a part of northeastern France.

"We wonder what has become of our poor Belgian beekeeping friends, in the frightful devastation of their country. They have our deepest sympathy, for France has not suffered in any manner as did Belgium. Our national life has continued, and the people are patiently waiting the final issue which is looked for without doubt.

"Beekeeping has not escaped the mishaps of the conflict. Most valid men have left their homes, without caring for the bees, without harvesting the honey. The bloody conflict through which we look back upon it will cause us to appreciate better the quietude and peaceableness of our industry when we are again able to return to it. It is a great joy when we happen to meet, in camp, another lover of bees. We forget the fatigue of the march, the constant worry, the sorry trench life, and even at this moment, while writing to you, I almost fail to hear the roar of the cannon which occasionally shakes my table and renders my pen unsteady.

"Since the beginning of the campaign I have traveled over a considerable scope of the country. I have passed through many devastated regions. I have seen many dismantled villages, many smoking ruins. When at leisure to do so, I have enquired of the rare remaining inhabitants about the state of bee culture. Everywhere the reply has been the same: 'Alas! our apiaries are destroyed, either by fire during the burning of the village

A SENTINEL ALONG THE BATTLE LINE

or by pillage when the barbarians passed through here.'

"We knew already before the war that the Germans are great lovers of bees. But they appear to have demolished the apiaries in the invading country, either for the pleasure of destruction or to take possession of the honey which is so strengthening an aliment much appreciated by the combatants and by all those who are overworked physically or intellectually. It is probable, however, that the bees have often taken revenge against the invaders and have given them to understand that the theft was not approved.

"When I wrote of honey, in the American Bee Journal, it was my intention to speak of its alimentary properties. I have had occasion to appreciate these qualities during the campaign, not only as food but as a remedy. The camp life, the meat food of the bivouac, the almost complete absence of vegetable sustenance, to which ill-conditions are added the fatigue of marches and intensive over-exertions had sickened a number of the men under me. Almost all of them were suffering of colics and excessive diarrhea or dysentery. We were not then provided as we are now with a good physician. During war, an officer must be not only a soldier but also somewhat of a doctor, as occasion demands. I did not have with me the necessary remedies. The supply of bismuth, opium, paregoric, etc., in my canteen was soon exhausted.

"The idea then came to me to try honey. I found, in the Meuse region, a beekeeper having nearly 300 kilograms of excellent honey in stock. Our sick soldiers were then treated by doing away with meat, allowing only vegetable bouillon and 250 to 300 grams (8 to 10 ounces) of honey per day, with a complete rest.

"At the end of five or six days the diarrhea disappeared as well as the colics. This may seem extraordinary to some people, since honey is considered as a laxative. But it had the property of strengthening the inert intestines and putting them in working condition, owing to its assimilability and the *invertin* which it contains.

Devastated Scene and Group of French Army Officers—Mr. Caillas on the Extreme Right

"My sick men would have been glad to remain sick longer, as the treatment was very much to their taste. I am satisfied that I have won a number of men to the use of honey, some of whom hardly knew of the existence of that article of food. When the war is over they will remember that it caused them great bodily relief.

"But I must close this letter. I see over the snow-covered hill top, beyond the ruins of a number of houses, the smoke of canonade explosions. I must go back to the reality and to the call of duty.

"I have received from your readers a number of letters, which I have answered as regularly as possible. I prefer to have all my correspondence forwarded to Paris, 75, Avenue Mozart, from whence letters will reach me at the front.

"Accept my heartiest good wishes for you and all your readers."

Alin Caillas, *Lieutenant.*

Fumigating Combs With Sulphur

BY FRANK F. FRANCE

In securing a large honey crop in a good year, it is very necessary to be ready to secure it just at the proper time. The best banks of deposit when the honey-gathering season opens, are plenty of storage room, plenty of good foundation in frames, and (if you have them) lots of drawn combs.

If a beekeeper has on hand two and three sets of drawn comb for each colony, it becomes a problem to keep the combs free from the bee-moth, especially where there are combs for several hundred colonies. I don't care how careful a beekeeper is, moths will get into combs, especially where there are several thousand to look after during the warm weather.

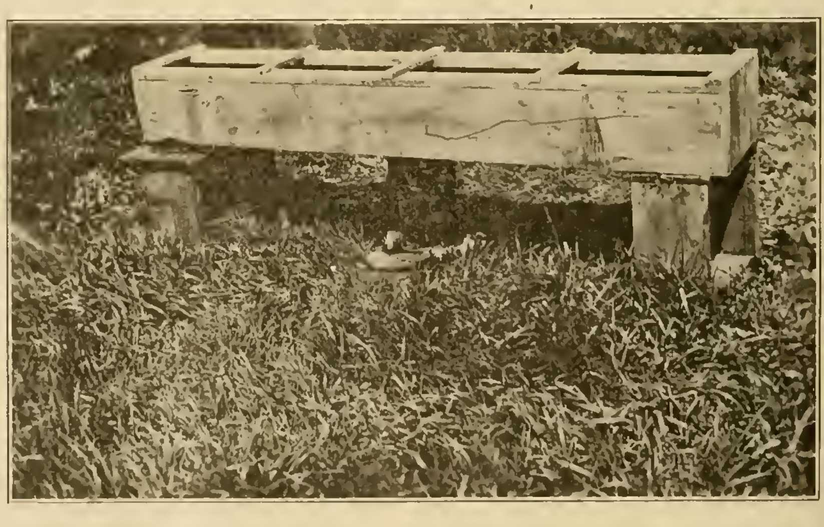
It is my plan to have all my combs sorted in three or four groups; worker, drone, and combs with honey. It is also my plan to go over these combs on an inspection tour every two or three weeks during the warm weather (before and after they are put on the hives) to see if the moth-worm is present. If I find the moth-worm in the combs here and there over the hundreds of combs, I have the entire lot fumigated.

For several years past I have fumigated the combs with carbon bisulphid, but even though it did the work most satisfactorily, it became considerable of an expense, so I made the fumigating box, as shown in the illustration, and used sulphur for fumigating.

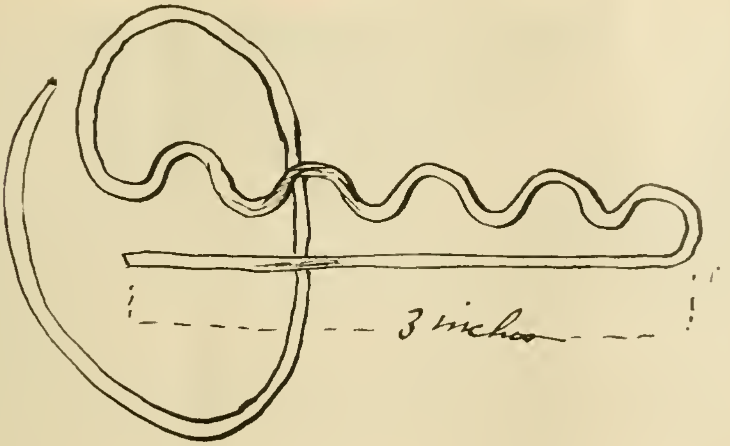
The box is made long enough to support four tiers of hives (five supers of nine combs each to the tier), with a 2-inch space between each hive (a cleat nailed on) to allow for handles. Each box is about a foot square. In the center of the bottom is a 3-inch hole made to fit the top of a 3 inch screw-top round honey can. Over the hole inside the box are placed some wires in an arched form with a little piece of asbestos so as to keep all possible excess heat, if any, from the combs.

The box is set on two hive-bodies and leveled both ways. The round can is then fitted and leveled below. The can has a small door cut out on the side near the bottom to allow the placing of special sulphur burners. The sulphur burners are made as follows: Make three wire standards like illustration; cut three pieces of coarse cheese cloth about 3 by 6 inches; lay on a flat surface and pour on this a good layer of powdered sulphur; fold up the bottom of the cloth about one inch and lay your wire standard on one end of the cloth and wind it around it and then tie with a piece of frame wire.

Light each burner from the top and place in the bottom of the can (after the supers of combs have been placed and cover on each pile) The burners will burn from 15 minutes to half an hour or longer, according to the amount of sulphur placed in burners. The fumes will last from one to two



FOUR COMPARTMENT BOX USED BY FRANK FRANCE IN FUMIGATING SUPER COMBS WITH SULPHUR



SULPHUR BURNER USED BY MR. FRANCE

hours. Every hour or two a new set of supers of combs is placed and a new set of burners made. The wire standards are made out of wire the size of telephone wire, and can be used over and over again.

The cost of fumigating thus costs very little and is a sure cure or kill to moth-worms in the combs. I use commercial powdered sulphur and buy in 25-pound packages.

Platteville, Wis.

Country-wide Advertising to Increase the Sale of Honey

BY G. E. BACON.

BEFORE we can successfully carry on a country-wide advertising campaign to increase the sale of honey, we must first answer three important questions which confront us: First, whom to reach; second, how to reach them; third, where is the money coming from to maintain this campaign?

I will answer the first two questions if you will answer the third.

WHOM TO REACH. It is manifestly obvious that we wish to reach the general public.

HOW TO REACH THEM. Bearing in mind that it is the general public that we wish to reach, the question is easily answered: Newspapers, magazines, street cars, etc., which are the mediums generally employed to reach the general public.

An advertising campaign for the sale of honey must of necessity be general in its character and scope. It must be educational. It is not enough to tell the average reader to eat honey, but you must tell him *why* he should eat honey.

In telling him why he should eat honey, you are not talking to him about an article of food which is always of the same appearance, texture, flavor, or which is sold under a uniform brand or seal. You are just talking about honey, which may be comb honey, extracted honey, which may be light in color, dark in color, medium in color, and which may be one of 40 or 50 different flavors, according to the country or locality which has produced it.

An advertising campaign to increase the sale of honey could be similar to a campaign recently carried on by an orange raisers' association in the West to increase the demand for oranges. The advertising urged the public to eat oranges, and stated why they were nutritious and in a general way why they were beneficial. You have no doubt also seen advertising in the magazines signed, "There is a Photographer in Your Town," and the advertising goes on to tell why you should have your photograph, or the photograph of your family taken.

A very important factor that we must reckon with, presuming that we should conduct a campaign for country-wide advertising to increase the sale of honey, is the supply. When we deal with the factor of supply, we are handling an uncertain quantity, as some of you have learned to your sorrow last year when you had half a crop, or, worse still, no crop at all; and on the other hand you may have a bumper crop this year; but remember the advertising is going on just the same, creating the demand. But will the country at large provide an ever-increasing supply?

In order to conduct a general campaign I think you will see it is evident that a large amount of money must be appropriated, or the campaign which must be country wide and general in its scope and character will be merely a drop in the bucket and money thrown to the winds as regards any appreciable result to the individual beekeeper.

It is also manifestly true that an organization must stand back of the advertising, who shall secure the money or its equivalent from its members before it can be appropriated; and is there, I ask you, any beekeepers' organization in the country today that is so financially constituted that it can afford to go into a campaign of such proportions? I will be glad to hear a discussion on this; and if you can solve this problem, the rest will be easy and I leave it to you.

Should you decide, after having the facts in hand, that a campaign for country-wide advertising to increase the sale of honey would not at this time be feasible, then there is according to my way of thinking some way out of the dilemma—in a word, a middle course, a substitute, and this is an individual campaign on the part of each of you to increase the sale of your own honey in your own market. If you will look around in your own locality, you will find there is a demand for your product which is latent, which is sleeping. You can arouse it. You have no idea of the possibilities until you apply the ordinary principles of business, including advertising.

We will say that you live in a community of 5000 inhabitants. You raise more honey than you have found you could sell by present methods in your own community. Let me ask you, what have you done to sell it? Have you made a house to house canvas? Have you used your newspapers? Have you advertised properly? Just for fun try a 4-inch single column ad in your local paper for a month. Speak to the reader as you would talk to him if you had a pound of your best honey in your hand and you were trying to sell it to him; but before you try to advertise your honey, be sure that you are going to make it easy for your prospective customer to get it. He must know when and where he can get it.

FOUR TIERS OF EXTRACTING COMBS BEING FUMIGATED WITH SULPHUR AT ONE TIME—Frank F. France.

Some concern wishes to introduce into your own town a new baking powder or brand of coffee, or a new kind of easily prepared pudding or breakfast food. What is done? Why, this concern simply rents a small space in your leading grocery store, attractively covers a table, puts a few dishes on it, has an interesting young woman nicely dressed behind it, and then proceeds to deal out samples. Now, you can do the same thing with your honey. It would be a very easy matter for you to obtain space in one of the leading groceries; in fact, you could do it better than an outside concern. Probably it wouldn't cost you a cent, if you arranged with the grocery store to sell your honey after you had introduced it and exploited it.

In a nutshell, what I am trying to get at is the fact that the demand for honey is at your own door if you will only hear it knocking. You know there is such a thing as getting so close to a thing that you can't see it. If the average honey producer will combine with his honey business a little energy, throw a little of his personality into his work, apply business principles, not be afraid to risk a dollar if he can get two back, he will be successful and all the honey he can raise will be sold.

Watertown, Wis.

Cleaning Up Foulbrood

BY A. L. KILDOW.

(Illinois State Inspector.)

I AM sending two pictures, showing a comb of American foulbrood and the burning of an apiary in Will county.

On May 13, I answered a call from Plainfield complaining that a beekeeper let his bees die of American foulbrood and allowed them to be robbed out by the neighborhood bees. On arriving at the apiary I found three colonies that had bees, two very weak the other of fair strength, but all badly affected with American foulbrood. The owner had done nothing to stop robbing; the entrance was left wide open except where the dead bees had dropped down and clogged it.

I went to the field where the owner was planting corn, and had a talk with him. He told me the story that I so often hear, he had "too much work to do, and as the bees were a side issue, they had to be neglected;" and, by the way, this man is a good farmer and a good man, and does not mean to do his neighbor beekeepers any injury, but something had to be neglected, and it was the bees.

I explained as best I could what would happen by letting his bees rot down with foulbrood and be robbed out. I advised him under the conditions to burn them. He agreed, and gave me permission to do it.

So after dinner a neighbor and myself, equipped with spade and camera, went to the apiary. I dug a large hole about two feet deep, gathered a quantity of wood and made a good fire; we then took a wheelbarrow and wheeled the hives to the fire, took out the frames of brood and honey and piled them on. When all was burning well we took the two pictures. The fire does not show very plainly, as there was very little smoke.

ILLINOIS STATE INSPECTOR KILDOW BURNING A FARMER-BEEKEEPER'S COLONIES WHERE AMERICAN FOULBROOD WAS RAMPANT

I dislike to resort to fire, but sometimes it has to be done, and I hope that all who see these pictures and read this will be vigilant, and not allow their bees to get in this condition.

Putnam, Ill.

A GROUP OF VISITORS IN THE APIARY OF A. E. CRANDALL & SON

The Value of Fairs to the Beekeeper

BY A. E. CRANDALL.

I WONDER how many of the beekeepers who live near cities or towns where fairs are held take advantage of the opportunity to show their product, and in this way get in touch with the thousands of people who annually gather at these places, and who go there to see what new things are being brought out, to talk with old friends, make new ones, and to have a good time in general.

The Connecticut Beekeepers' Association is doing excellent work along this line, and many words of praise are heard for their large "Bee and Honey Exhibit" which is annually placed at the Connecticut Fair in the city of Hartford. The Fair opens on Labor Day, and so gives the laboring classes an opportunity to see what is going on in the agricultural line as well as in the industrial.

I understand there are something like 70,000 people who pass through the gate on that day. Doesn't that seem like a fine chance to put bees and honey before the public? Another thing, the fairs are educating people to realize the value of honey in making cakes, cookies, muffins, and in canning fruit. The culinary department at the Hartford Fair provides for an exhibit of this kind, and the following classes and prizes given will give some idea of what can be done along this line, and this encourages the use of honey:

PREMIUMS

Class	1st	2d	3d
18.—Honey muffins............	$4 00	$2.00	$1.00
19.—Cookies and ginger snaps.	4.00	2 00	1.00
20.—Cake........................	4.00	2.00	1.00
21.—Canned pickles............	4.00	2 00	1.00
22.— " fruit	4.00	2.00	1.00

Honey to be used in preparation of above and *receipt attached.* A good many times one can find a store-keeper who

A GROUP OF AMATEUR INSPECTORS AT THE CRANDALL APIARY IN NEW BERLIN, CONN.

would allow an exhibit to be placed in his window, and if it is done at a time when a frame or two of bees can be shown, with a printed card such as "Find the Queen," would serve as a means to attract attention and get people to thinking of honey when they otherwise would hardly give it a passing thought. A great many people regard honey as a luxury, and will only use it sparingly, or in case of colds. I find a good many who use honey and lemon juice for colds, and seem to think it an unfailing remedy.

I am enclosing pictures of our two children who take delight in working with the bees, and are shown with a mating hive open. No. 2 shows them with some of our friends from the city who are handling bees for the first time, and No. 3 shows the apiary of Mr. Pratt, of Wethersfield, Conn. The Connecticut Beekeepers' Association held their annual convention at his home last summer. Mr. Pratt is the gentleman in the middle with his coat off.

Berlin, Conn.

Crandall Apiary

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
Dr. C. C. Miller, Marengo, Ill.
He does NOT answer bee-keeping questions by mail.

Swarm Prevention

When a hive is "full of bees" add a super full of frames with comb and foundation; when the added body is fairly filled up, set an excluder between the two. About a week or ten days later separate the two hive-bodies, putting the one added on the old stand and the original hive-body beside it, so that the queen will be in the added hive-body on the old stand, which is to be ascertained by the presence of eggs in one hive-body or the other *after* four days. Then the queen is to be transferred to the hive-body that was added and now on the old stand. The question is:

1 The queen having been separated four days from the bees on the old stand, could she alone or with the frame of bees she is on be put at once into the hive thereon, or would it be indispensable for safety to cage her for a day or two, before releasing her in the hive?

2. How long should it require an average beekeeper to examine 50 colonies, as should be done about every eight days?

3. When having old combs in frames taken from colonies that died during the winter, to what extent is it good practice to dig the dead bees out of the comb?

PENNSYLVANIA.

ANSWERS.—1. If the bees are entirely queenless it would be quite safe to give the queen without caging. There is, however, a possibility that since the excluder was given a virgin may have been reared, and of course that would jeopardize the queen. Of course, you could forestall that by killing cells.

2. To go through the 50 colonies should make a fair day's work.

3. Brush off all the bees you can, hold the frame flat and shake vigorously, shaking some of the bees out of the cells; leave those that will not shake out for the bees to dig out; they can do it cheaper than you can.

Increase of Colonies

1. If a colony is ready to swarm on May 15, and the honey-flow starts June 1, can I increase by taking the *old* queen and two frames of sealed brood from it and form a new colony?

2. Is it safe to form a colony by taking frames of sealed brood and queen-*cells* instead of *queen?*

3. When taking old queens and sealed brood is it necessary that I look further to see if I leave any queen-cells?

4. If this will work, could I feed a *new colony* through July by making one continuous honey flow and then divide them again during the fall flow as per above; 50 percent is all I want?

5. If this method will work, would it add to my honey yield by not letting them swarm?

SUBSCRIBER.

ANSWERS.—1. Yes; but you're likely to have a high old time with swarming when the virgins hatch out in the old hive ten days or more after you remove the queen. You can prevent that by destroying all queen-cells but one eight days after removing the queen. A little better way, if you don't mind the trouble, is to go to the hive each evening after eight or ten days and listen for the piping of the first virgin. When you hear that, go to the hive the next morning and destroy *all* queen-cells. That will leave the free queen in full possession without swarming, and no danger of further swarming until the next year.

2. Very unsafe if no precaution whatever is used. For when you look a day or two later you are likely to find the bees mostly gone and the brood chilled. After putting the two frames with adhering bees in your nucleus hive, shake into it the bees from one or two more frames. Then see that your hive is closed bee-tight so that not a bee can get out for two or three days. It's not a bad plan to stuff grass or green leaves into the entrance, plugging it tight and hard. The green stuff will dry and shrink, and in two or three days the bees will dig their way out.

3. No, there will be eggs and young brood from which the bees can rear all the queens they want.

4. Yes, if the fall flow is good enough. But I hardly understand your saying you want only 50 percent increase. If you divide each of the old colonies once, that will be 100 percent increase, and if you divide the second time it will be 200.

5. Yes, if you depend mostly upon the early flow.

Swarm Prevention—Increase—Sealed or Unsealed Larvae

1. In September American Bee Journal, page 310, C. F. Greening gives a plan for the prevention of swarming Please tell us how *you* would go at using the plan for *comb* honey.

2, For increase he sets the hive 16 feet away, leaving on the stand another hive with a frame of brood, allowing the field bees to return and rear a queen. Please give your opinion of the plan.

3. As to removing the colony at least 16 feet away, and putting a super on that; would you for comb honey expect to have to do anything else?

4. In "Root's A B C and X Y Z," page 553, 1913 edition, "a frame of unsealed larvæ" is thrust into the bees of a swarm, so that they may crawl upon it. Are unsealed larvæ better than sealed for this purpose?

SUBSCRIBER.

ANSWERS.—1. For comb honey I wouldn't try to use the plan Couldn't. The essence of the plan is to keep brood constantly over the super. A number of times I have tried brood over a section super, and always the cappings of the sections were darkened. I suppose by bits of wax brought down from the brood-combs above.

2. The ease with which the division is made commends the plan; but it has objections. The young queen must be started by field bees, which are past the age for doing such work well; and to rear queens of best quality there should be bees of the proper age. The colony on the old stand is made up entirely of field bees, and these will be dying off daily with no progeny of the young queen to replace them for about three weeks.

3. No; and if the season should be rather short you wouldn't need even to put on a super. For normally there would be no bees to go afield under 16 days; and although under stress bees will begin gathering sooner than that, it would be some time before enough would be gathered for more than daily use.

4. As between sealed and unsealed larvæ, if you have either kind alone, I think sealed would work better than unsealed. When, however, you take a frame having unsealed

arvæ, you generally have sealed, too.

Italians or Caucasians?

I have 20 colonies of bees that I want to breed up to Italians or Caucasians. Which would you advise me to breed them up to? TEXAS.

ANSWER—Opinions differ; but Italians are so generally preferred that you will be safe in adopting them.

May Disease—Moth

I have one colony of Italian bees in my yard that are dying from some cause. The adult bees are dying by the hundreds They come dragging out of the hive, and sometimes crawl part way up the front; others fall off the run board; they are trembling or jerking and moving their wings; sometimes they just turn around in a very small circle, and sometimes they lie on the ground for two days kicking or moving their legs until they finally die. Some have greatly enlarged abdomens, and look almost as large as a young queen; while others look shiny like they had just crawled out of grease or syrup. They have considerable honey and brood, but do not gain any.

1 Do you think this is what they call May disease?

2. What is the cause?

3. Is it contagious?

4. Do you think it would do any good to re-queen?

5. What can I do to get rid of this disease?

I see in the American Bee Journal where a great many keekeepers ask how to get rid of moths I had a hive infected with moths last spring, and this was my remedy. Take a medium sized fishhook, heat it red hot and straighten out curve, leaving barb intact. Raise a frame and gig Mr. Moth, and you will bring him out webb and all. You can catch a dozen or more before cleaning off hook. MISSOURI.

ANSWERS.—1. Your excellent description marks the disease quite clearly as the disease called in Europe Mal de Mai or Maikranheit (May disease), and generally called in this country bee paralysis.

2. It is believed to be due to a microbe called *Bacillus gaytoni*, and also *Bacillus depilis*.

3. It is not considered contagious; yet sometimes affects a whole apiary.

4. I don't know. Some have claimed that as a cure; others say it does no good.

5. I don't know. Many cures have been reported successful, only to fail when tried further, and as the disease has a way of disappearing of its own accord the supposed cures may have no effect. O. O. Poppleton sprinkles sulphur on the bees and combs. This destroys the sick bees, but it also destroys the unsealed larvæ, unless this be removed.

Your treatment of wax-worms is effective.

It is also a good plan to have strong colonies of Italians, which will prevent the encroachments of the miscreants.

Swarms Between the Walls

I have an old frame building and between the walls honey-bees have made a home. There are three or four colonies in this building, and I would like to know if it would be possible to get them out from between the walls and put them in standard hives? MONTANA.

ANSWER.—Cut away the walls so you can get at the combs, and put them in the hive; leave the hive as near as possible to the old place of entrance; close up the wall so no bee can get into it, keeping the bees smoked out until this is done, then gradually move the hive each day to where you want it. That's the general principle, which may be varied according to circumstances.

Controlling Swarming

In the September issue, 1914, page 310, is an article by C F. Greening on "Controlling Swarming," which I find most valuable. I wish to ask a few questions concerning it.

1. It being supposed the colony is a strong one, and of course no queen-excluder being used, will the queen always lay eggs in the super added to the brood-chamber "as soon as it becomes warm" in the spring? In case she does not, this plan is doomed to fail at the very start.

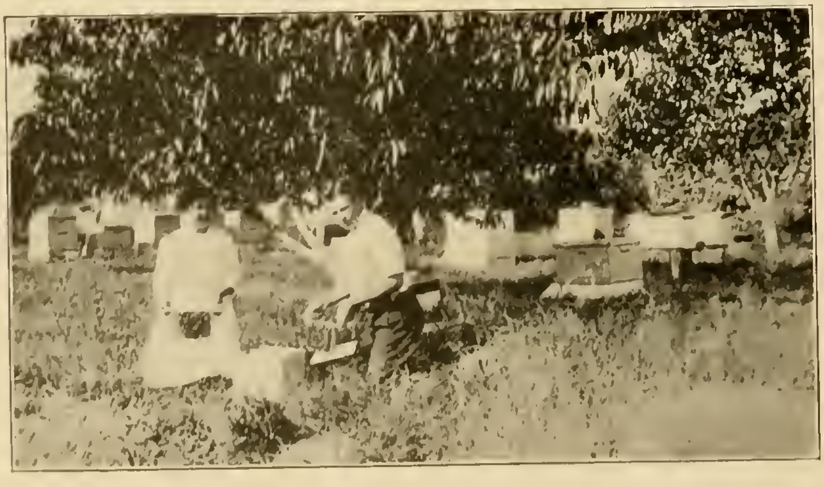
2. In case she does not come up to lay in the super, what shall I do?

3. Would this plan work with large brood-chambers, such as the Dadant, the Quinby, or the Massie hive which has a double brood-chamber of a capacity equal to 14 Langstroth frames. With such large hives how can I make sure the queen will lay eggs in the first super added in the spring? MONTANA.

ANSWERS.—1. I don't think you can always be sure of the queen going above to lay, especially if the hive be very large; but the plan is not necessarily doomed on that account.

2. Take a frame of brood out of the brood-chamber and put it up.

3. You seem to think that an essential part of the plan is for the queen to go up and lay in the story above. If that be so, then a very large hive would not do. But I hardly think that is essential. If I understand Mr. Greening aright, he wants brood always above, with plenty of room for the bees to store between that and the brood-chamber. The large size of the hive would not interfere with that. Indeed, if I am not mistaken, with the very large hives used by the Dadants they have very little swarming, even without keeping brood above.



EXAMINING A BABY NUCLEUS AT THE CRANDALL APIARY

Preferable Height of Stands—Preventing Swarming—Undesirable Queen—Moving Stands

1. Which is better, a hive stand a couple of feet high or one a few inches high, with the entrance board slanting, so that in case the clipped queen went out to swarm she could crawl back in the hive again and thus not be lost?

2. If a clipped queen swarmed from a hive upon a high stand and fell to the ground in the absence of the apiarist and could not get back, would the swarm return to the old hive, and would they in finding their queen absent proceed to rear a new queen in her place, or what would happen?

3. Would, what is called "swapping combs," *i e*, taking a frame of brood from the brood chamber and exchanging same for an empty frame of comb or foundation from the surplus box, tend to get the bees to work in the super and also tend to prevent swarming?

4. What do you consider (briefly) the best and simplest method of preventing swarming and at the same time get the largest yield of honey in the supers?

5 Please state some of the indications of a poor, failing, or old queen.

6. I want to move three colonies about 30 feet directly back of present location Will it be all right to do this in the evening and put a slanting board at entrance for them to locate the change? NEW YORK.

ANSWERS.—1. For you it is probably better to have the hive quite low. Where certain kinds of ants are bad (generally in the South), it is well to have the hive on legs so that by means of dishes of oil or water the ants may be prevented from getting into the hives several feet high.

2. The swarm would return to the hive, in which there are already a number of young queens in their cells. The first of these will emerge from its cell in a little more than a week, generally, and a swarm is likely to issue with her.

3. It would tend to start the bees to work in the super, but would not do much to prevent swarming.

4. That cannot be answered "briefly." I have told pretty much all I know about it in "Fifty Years Among the Bees," occupying a good many pages. But I'll try to give something of a summary that you may find on another page. I'll say this much here. If a colony is made queenless for ten days, and then a queen is given that has been laying only a few days, there will be no swarming that season.

5. Some of the brood in worker-cells may be drone-brood, as shown by the raised cappings of the cells; the brood may be scattering, or it may be scanty.

6. Yes; but some bees will return in spite of that. It will help if you keep the bees fastened in the hive until the middle of the next day, and then pound on the hive until the bees roar good and loud before you let them out.

Clipping Queens—Swarms—Foundation in Sections

1. When queens' wings are clipped, is she held by the wings or clipped while moving on the combs? Is one clipped wing sufficient?

2. When several swarms issue at once, if the queens are clipped, will all the bees go back to their own hive?

3. When a swarm issues we move the old colony away and put the new swarm on the old stand. Is it best to leave the old hive near the old stand for a few days, and if so, why?

4. Last summer I had six swarms come out and go away together (unclipped queens), and some of the queens were balled and killed. What can one do to separate them?

5. Do you put foundation on both the top and bottom of sections?

6. When a super is nearly full of honey, is it best to put another super on top and let the bees get well to working before "undersupering?" MICHIGAN

ANSWERS—1. Some hold the wings of one side between thumb and finger, and cut them off with the small blade of a pocket

American Bee Journal

APIARY OF OVER 50 COLONIES OF F. H. MINOR, OF PERRY, N. Y.
His assistant in the foreground.

knife made very sharp. Some clip the wings with a pair of scissors while the queen is on the comb. Perhaps the majority hold the queen by the thorax (never by the abdomen or soft part), while the two wings of one side are cut off with a pair of scissors.

2. As a rule each bee will return to its own hive. In a large apiary, however, it sometimes happens that there will be some mixing, part or all of the bees of a swarm being attracted by the noise of a returning swarm that had previously issued.

3 It is best to leave the old hive standing close by the swarm on the old stand for a week, because, as explained many times in this department, if the old hive is left there for a week and then removed to a new place there will be no afterswarm.

4. You can pick out each ball, put it in a hive, and then distribute to each ball its proportion of bees; for a queen is not likely to be injured in a ball until you have time to make the distribution

5. Yes; a ⅝-inch bottom starter, and the top-starter coming down within about ⅛-inch of the bottom-starter.

6. When a super is something like half filled, and the prospect is good for a continuous yield, put a new super under. You may at the same time put an empty super on top, ready to be put next to the hive at the next shift.

Swarms Leaving Hive—Requeening

1. It seems that after swarms have been in a hive from four to five years they will leave, and when they go you cannot settle them They seem bound to go. If you examine one of these hives they will contain from 40 to 50 pounds of honey. The bees are in modern hives What is the reason of this? Is it because they are crowded? I know of one man who has lost at least 12 colonies this year

2 When is the best time of year to requeen? OREGON.

ANSWERS—1. I cannot explain why it seems so, but I can tell you that it seems wrong. After a colony has been in a hive four or five years it is no more likely to leave than in the first year, if as likely. Neither is a hive gradually filled up with honey. If too much should happen to be in it one year, next year it is just as likely to have too little. All this under proper management. If too little super-room is given, the brood-chamber may be crowded, and this may increase from year to year, and this might or might not tend toward swarming. The remedy, of course, is to give plenty of super-room. But if a colony swarms because of too much honey in the brood-chamber, the swarm is no more likely to go off than any other swarm.

2 Taken all in all there is probably no better time to requeen than toward the close of the honey harvest. But it will be a gain in your case not to wait so long, but to get your new queen in June or July. Early in spring is about the worst time. A queen reared too early is not a good queen, and it will cost more for a queen then than later.

Non-Swarming—Requeening—Swarming

1. Will a strong colony of bees that has never swarmed make as good comb honey as one that has swarmed? Will they work in the supers?

2 Is it best to put a swarm on the old stand?

3. Where would you put the old hive?

4. Do you think I need to requeen the colonies this fall that I requeened last summer? If they are good this spring, will they be good the spring of 1916?

5. What time of the year is best to requeen?

6. What time of the day do the the first swarms fly out?

7. Will a swarm fly out before a queen-cell is sealed? IOWA.

ANSWERS.—1. As a rule, the more swarming the less honey. I always get my largest yields from colonies that have no thought of swarming.

2. Yes, unless you want afterwarms.

3. The old hive should be put close beside the hive containing the swarm, and a week later moved to any new place you like, 10 feet or more away.

4. No need to requeen if the queens are good.

5. Depends somewhat upon circumstances. At the close of harvest is a good time, but if a poor queen is in a hive in the spring, better wait until fall. I don't requeen at all unless a queen is poor.

6. Generally from 9 a.m. to 3 p.m., but sometimes earlier and later. If a morning is very hot, a swarm may come out early. If the day should be rainy, and clear off rather late in the afternoon, a swarm may come out then.

7. Sometimes; but generally not.

Uniting—Porticoes—Wintering

1. In uniting two colonies, how many thicknesses of newspaper would you put between them, and would you keep the top one confined until they gnawed their way through?

2. What hive do you prefer, one with porch or one without, and why?

3 In wintering bees outdoors, when a

A SWARM OF BEES JUST BEING HIVED BY MR. MINOR warm day comes in winter and the bees fly out and drop on the snow, are they sickly or healthy bees? WISCONSIN.

ANSWERS.—1. At first I used two thicknesses, and punched a very small hole through the paper. Latterly I have used a single thickness of paper, and I don't see but it works just as well. I pay little attention to the paper, leaving it until the first time I want to open the hive for some other purpose.

2. A porch makes a nice nesting place for spiders, so I prefer a hive without a porch.

3. Either or both.

REPORTS AND EXPERIENCES

Wintering Small Nuclei

In November, 1912, ten nuclei contained each about two handfuls of bees with a young queen. I was at my wits' end to winter them. As they were some 30 miles west of Philadelphia, I concluded to move them to my cellar here. These bees were carried over rough country roads in an automobile, and arrived here about 7:30 p.m. and placed in a cellar, having had no cleansing flight for five weeks. I lost one. The queen got killed, I think. There were 12 tons of coal and one load of wood dumped in the cellar within 15 feet of these bees. The heater was 8 feet away, and the cellar was used to dry clothes in on rainy and cold days, so there could not have been absolute quietness there.

I placed them in one corner, and three or four times when bees could fly, I carried out the little 5-frame boxes and the bees had a fine flight. On Feb. 18, I gave each of the ten nuclei a small bottle of syrup, sugar and water equal parts. Making a small hole in the super cover, and a small hole in the top of a tin-covered bottle, so the feed would be very slow in passing out. The bees were kept dark, so they did not fly. They bred up fast, and when nice warm days came, about April 10, they were ready to set out, and had enough young bees to take care of the heat problem inside. The older bees gathered pollen and nectar enough to keep things going.

The only fear I had in my first wintering was spring dwindling. That was overcome by the hatching of bees and brood. Brood in that state helps to keep bees warm. Six of these colonies were covering five or more frames June 1, and would have stored surplus if there had been any at that time.

In 1013, I wintered some 24 small colonies in the same place. I use building paper to make the corner dark. There was no roar, and all were quiet until warm days; then I placed them in the front yard within 10 feet of the sidewalk, and the bees took a flight. In the middle of February I started feeding. The little lots of bees consumed some 8 to 15 pounds of honey while in the cellar and rearing brood. I shall in the future winter all my mating nuclei this way, and have nice young tested queens early. I placed 27 in the cellar on Dec. 15, 1914, and expect them to do as well as in the past.

I am sure bees can be kept where the temperature will go as high as 60 degrees, and never as low as 38. Noises do not seem to hurt as much as light. I looked into a nucleus last Friday, Jan. 1, and they were lively I took a lamp with me, and a man who thought I was fooling when I told him I had a cellar full of live bees. When I opened the hive they came up to greet me as in June, and my friend wanted to run, but as the bees did not fly, he and they quited down. The hum just lasted one minute, I advise all who wish to winter bees in the cellar to try a few weak ones and feed them as I did and see if they don't gather more honey than those wintered outside.

GEO. M. STEELE.

Philadelphia, Pa., Jan. 4.

[The above letter should have been inserted earlier. We hope to hear whether our correspondent has succeeded as well this winter as previously. His report mentions some interesting questions for the amateurs who have no special winter repository, and who are compelled to winter their bees in an ordinary house cellar.—EDITOR.]

The San Francisco Fair

I have visited the Panama-Pacific Exposition a couple of times in San Francisco, and noted some of the honey exhibits. Of course, the show is so gigantic an affair that it is not possible to take it all in at a hop-skip-and jump visit. I should judge that to do it justice it would take a month to begin to see anywhere near everything I spent ten days at the Columbia Exposition at Chicago in 1893, and I did not see a third of the things that I would like to have seen, not counting the Midway.

One of the best exhibits at the San Francisco show is that made by Australia; it seems the most complete and is well arranged. It is an education in itself. Its wool, mineral, native woods, apples and other fruits are well shown; also some nice samples of its honey in exhibition jars. In the California building, one of the counties makes a good display of honey. It gives prominence, in very large letters constructed of whitewood and filled out by the bees in delicate white comb, to its *alfalfa honey*.

I did not see any exhibits of apiarian supplies, but will hunt them up on my next visit. W. A. PRYAL.

Oakland, Calif.

Spring Condition of Bees in Black Belt of Alabama

The winter and spring of 1914 and 1915 was so changeable and irregular that the bees used plenty of winter stores before spring came to stay, and for this reason the loss was very heavy. Enough feeding of honey was done in the latter part of February to build up the weakest colony and have them ready for the first bloom, that of swamp trees vine creepers and blackberries. At the time these plants began blooming our spring drouth began which lasted until May 10. As it was general throughout this section, the effect on this crop depends largely upon the location. Melilotus is the important and, practically speaking, the only honey-producing plant in this section. It will begin blooming about June 10, and will last until after the middle of July.

The weather at this time is cloudy one day and clear the next These conditions seem to keep the bees within the hive and discourage swarming, of which thus far we have had very little, though the bees are unusually strong. If conditions continue we expect the usual average crop.

Demopolis, Ala, May 20. JAY W. NULL.

Experiences of an Amateur

Since I made Nashville, Tenn., my permanent home, about four years ago, my wife's people have had several hives of 3-banded Italian bees sitting under a shady walnut tree, about 100 feet from the family residence Up to last spring I used to venture within 50 feet of these hives, as I well remember the effects of a sting delivered right on the end of my nose by one of our neighbor's most vicious bees.

Last spring my wife handed me an Encyclopædia, and showed me an article describing in the most comprehensive and interesting way the "Ways of the Bees." This article was so interesting to me, that I thought it a good idea to make myself better acquainted with those bees under the walnut tree

Last March I determined to force an acquaintance with our bees. I wrapped myself in an overcoat (bullet proof), put on a pair of buckskin gloves, wrapped a blanket around my lower extremities, put a veil over my face, armed myself with a repeating "smoker," and proceeded to the hives as bold as any warrior.

I ventured to remove one of the brood-frames, and held it at arm's length in front of me to observe their way of conducting their business. After examining several more frames without being stung, I replaced the frames as I found them, closed the hive, and set my mind on going into the bee business on a big scale.

In reading the American Bee Journal I noticed a good many discussions on increase, artificial and otherwise, and some of the plans used appealed to me as a means of quick increase. I started out to try my skill on artificial increase. I communicated with a queen-breeder in one of our southern

INTERIOR OF HONEY HOUSE OF F. H. MINOR AT PERRY, N. Y.
Notice the wax-press at the right.

States, and bought a tested queen. I started for the shady spot with an 8-frame hive filled with medium weight foudation, removed two frames of brood all capped from one of the strongest colonies, placed them in a new home and closed the entrance with a wire screen nailed to a strip of wood the width of the hive. Then I introduced the queen. On reopening the hive I found that the bees were doing well; in fact, it showed a number of newly-filled cells. But a few days later I found that I provided the hive with more frames than the workers could well cover; the result was that I discoved the South was well infested with the bees' greatest enemy—the bee moth.

I did not know or realize the destructiveness of these pests, so I just removed the frames that were the most affected and destroyed them. But the moth had done their work secretly, for as I opened the hive again shortly after, I found neither queen, worker nor drones. But I was a little surprised to find the queen clinging to the side of the parent colony, begging for admittance. I sent to the same breeder for another tested queen, successfully introduced her, but she again proved a failure as a breeder. A good deal, in fact the principal cause of my failure, may be attributed to the scarcity of natural food for the bees to work on, as the South, like most sections of the United States, suffered last year from a long drouth as never before. Of couse, beedom suffered in consequence.

I did finally succeed, however, in making a divide which grew into a strong colony, and was wintered successfully.

Nashville, Tenn. FREDERICK BENDER.

Louisiana Beekeepers to Hold Meeting.—A field meet of the Louisiana State Beekeepers' Association will be held Saturday, July 17, at G. Frank Pease's apiary, five miles northwest of Shreveport, on the Mooringsport model road. Demonstrations and talks on bee culture will be the order of the day, followed by a business meeting of the association to transact all business that may properly come before the body. Everybody interested in bees is cordially invited to attend. Automobile service from Shreveport to apiary.

L. T. ROGERS, *Sec.-Treas.*
G. FRANK PEASE, *Pres.*

Conference of Inspectors and Instructora in Bee Culture of the United States and Canada

On Sept. 8, the day following the joint field meeting of the Iowa, Illinois and Missouri beekeepers at the Dadant apiaries at Hamilton, Ill., a meeting has been arranged for the inspectors and instructors in apiculture of the United States and Canada. These two meetings, coming together at such a central point, should draw beekeepers from many States. All beekeepers are invited to attend both meetings, and to take part in the discussion. The meeting of the inspectors and instructors will be held at Keokuk, Iowa, just across the river from Hamilton.

The program is not yet complete, but will be in part as follows:

"Cooperation of Inspectors"—N. E. France, of Wisconsin.

"Educational Work of Inspectors"—Dr. E. F. Phillips, Washington, D. C.

"Place of Botany in Beekeepers' Education"—Dr. L. H. Pammel, Iowa.

Papers have also been promised by Prof. Jager of Minnesota, Inspector Crane, of Vermont, Wesley Foster, of Colorado, and several other prominent men have been invited to speak who have not as yet been heard from.

The big dam across the Mississippi river, together with two big days of field meeting and convention should insure a large attendance. Remember the dates, Sept. 7 at Hamilton, and Sept. 8 at Keokuk, and plan to attend.

FRANK C. PELLETT.

Classified Department

(Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

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GOLDEN Italian Queens, about June 1. Untested 75c; half doz., $4.00. Tested, $1.25. Pure mating guaranteed.
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A ONE POUND SWARM of bees with choice Italian queen, $2 50; six for $13. A splendid way to make increase cheaply with good stock. Untested Italian queens, 75c each; six, $4 00; 25 for $15. Order now.
J. B. Hollopeter, Pentz, Pa.

ITALIAN QUEENS—Breeders, $2 50, $5.00 and $10. Untested, $1 00 each; six for $5.00; $9.00 per dozen.
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ITALIAN BEES, 2 lbs. $1 50, or with queen and frame of brood, $2.50; black bees, 65c a pound. Fine fruit and pasture land, $4.00 an acre,
C. H. Cobb, Belleville, Ark.

QUEENS.—The quality kind, 3-banded Italians only. Winners at Hartford and Berlin, 1914. Untested, $1.00 each; $9.00 per dozen
A. E Crandall & Son, Berlin, Conn.

PURE ITALIAN QUEENS—Guaranteed; by return mail One, $1 00; 6, $4.25; 12, $8.00; 50, $32; 100, $60. Also bees by the pound, nuclei and full colonies. Please send for free circular.
J. E. Wing,
155 Schiele Ave, San Jose, Calif.

GOLOEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

ITALIAN QUEENS, also the Golden Beauties and Carniolans Tested, $1.00. Untested, 75c each For bees by the pound and queens in lots write for prices.
Page Bankston,
Buffalo, Tex.

FOR SALE—Fine honey gathering strain of Italian bees in pound packages. One lb., $1 50; 10 lbs, $12 50; 100 lbs., $100. Special prices on larger quantities Small shipments by return mail.
Leib & Miller,
R. F. D. 7, San Jose, Calif.

THE SECRET OF SUCCESS is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and $1.00 for tested
G. W. Moon,
1904 Adams St., Little Rock, Ark.

QUEENS, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed.
H. C. Clemons, Boyd, Ky.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50.
C. B. Bankston,
Buffalo, Leon Co., Tex.

THREE-BANDED Italian Queens ready April 1, of an exceptionally vigorous and long-lived strain of bees They are gentle, prolific, and good honey gatherers. Untested, $1.00; 3, $2 50; 6, $4.50; 12, $8 00. Tested, $1.25; 6, $6 50; 12, $12.
Jno G. Miller,
723 So Carrizo St, Corpus Christi, Tex.

NOTICE—R. A. Shults will sell Italian queens in the season of 1915. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00 Breeders, $5.00. Bred from Moore and Doolittle stock.
R. A. Shults
R. F D 3, Cosby, Tenn.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3 00; Breeders, $5.00 and $10
C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

I CAN supply you with Golden or three-banded Italian queens Tested, $1 00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed
I. N. Bankston, Buffalo, Tex.

GRAY CAUCASIANS—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application,
J. J. Wilder,
Cordele, Ga

FOR SALE—Golden Italian queens that produce golden bees and good honey gatherers Tested, $1 00. Select tested, $1 25. Untested, 60c; dozen, $7 00.
D. T. Gaster, Rt. 2, Randleman, N. C.

FAMOUS North Carolina Italian Queens for for sale. Reared from Howe's best breeders Mated with Root's, Moore's, Davis', select stock. Free from disease. Untested, one 75c; per doz, $7.50. Select untested, one, $1.00; per doz., $9.00. Tested, $1 25; select tested, $1.50. Breeders, $3.00 and $5.00.
H. B. Murray, Liberty, N. C.

BEES AND HONEY FOR SALE—Nucleus, 1-frame, $1.50; 2 frame, $2 25; 3 frame, $3.00. Bees by the pound, ½ lb., $1.00; 1 lb, $1.50; 2 lb., $2.00. All the above without queens, f. o. b Chriesman, Tex. Queens, untested, 75c; tested, $1 00. Prices of honey given on application. Address,
J W. Small, Chriesman, Texas.

THREE-BANDED ITALIAN BEES AND QUEENS—One untested queen, $1.00; one tested, $1 50 Select tested, $2.00; best, $3.00. Selected nuclei, $1 00 per frame. Add price of queen to price of nucleus. Your money returned promptly if I cannot fill order as requested. Satisfaction assured.
J. L. Leath, Corinth, Miss.

FOR SALE—Queens, three-band Italians. Extra good strain. Their bees are great hustlers. Only drones from selected queens near mating yard Untested, one, $1.00; 6 for $4 50; 12, $8 00. Ready June 15. When ordering, state time within which queens are wanted They will be mailed promptly or money returned.
D. G Little,
Hartley, Iowa.

FOR SALE—Three-banded Italian queens from the best honey-gathering strains, that are hardy and gentle. Untested queens, 75c; 6, $4 25; 12, $8 00. Tested queens, $1.25; 6, $7 00; 12, $12. Selected queens, add 25c each to above prices. Breeding queens, $3 00 to $5 00 each. For queens in larger quantities, write for prices and circulars.
Robert B. Spicer, Wharton, N. J.

QUEENS OF QUALITY—Our hand Moore strain of 3-banded Italians are beautiful and good honey gatherers. Secured 223 sections comb honey from best colony in 1914 season. Only drones from selected queens near mating yard. Bred strictly for business. Untested, 75c; six, $4.00. Select, $1.00. Queens mailed promptly or money returned.
W. A. Latshaw Co., Clarion, Mich

HONEY AND BEESWAX

WANTED—Comb, extracted honey, and beeswax.
R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

HONEY FOR SALE—Have on hand 1,000 lbs. new imported Hymettus Honey. Make offer for part or entire lot. Chas. D. Stone & Co.,
Custom House Brokers,
112 West Adams St., Chicago, Ill.

FOR SALE

WATCH to trade for printing press. Dr. Bonney, Buck Grove, Iowa.

FOR SALE—I have 8, 10 and 11 frame Langstroth hives. Prices will be low as I am out of beekeeping. Write for what you want.
Edwin Bevins, Leon, Iowa.

FOR SALE.—In the famous Snake and Boise River valleys, surrounded by thousands of acres of alfalfa and sweet clover' 500 colonies of bees; 1915 honey crop supplies and equipment. Randall & Ross, Nampa, Idaho.

ANT RID destroys ants in the house, apiary or lawn Guaranteed. 25c postpaid. Man'fd and for sale only by
A. D. D. Wood, Box 61, Lansing, Mich.

SUPPLIES.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

FOR SALE—I am selling foundation and paying the freight to your station anywhere in La, Root's goods for sale. Send me your orders Am paying 28c cash for wax or 30c in trade delivered here.
J F. Archdekin, Big Bend, La.

WANTED—Parties to make and sell Beeswax Scales. (Patent applied for.) Expected to be better, and more Comb Honey than Comb Foundation. Henry Vogeler,
3541 Custer St., Oakland, Calif.

STANDARD DOVETAILED HIVES shipped direct from factory in Iowa. Fine 8 frame for $6.00. Hoffman frames, $2.75 per hundred. Plain sections, $4.20 per M Write for prices on what you need—a full line. Queens, 50c each. Write for large lots in July, August.
The Stover Apiaries, Mayhew, Miss.

WANTED

WANTED to hear from owner of good farm for sale. Send cash price and description.
D. F. Bush, Minneapolis, Minn.

PONTIAC ENGRAVING CO
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.
Untested queens, $1.00; 6, $5 00; 12, $9.00
Select untested, $1.25; 6 $6 00; 12, $11.00
Safe arrival and satisfaction guaranteed. Circular free. I am now filling orders by return mail.

J. P. MOORE,
Queen-breeder Rt. 1, Morgan, Ky.

Three-Banded Italians

GET THE BEST

Twenty years selection and breeding brings Murry's Queens above the average. Untested, 75c; 6, $4 00; 12, $7.50. Tested, one $1.00; 6, $5.00; 12, $10. Select tested, one, $1.50; 6, $8.00; 12, $15.

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buys a Standard Typewriter your choice. Late Style Visibles. Back Spacer, Tabulator. Two-color Ribbon. Every modern operating convenience. My prices lower than other cash prices. Perfect Machines. Fully guaranteed. Ask for Special Five D[illegible] Trial Offer. **H. A. SMITH**
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You are cordially invited to join the "**BOOSTER'S CLUB**" so that you may assist in a uniform, happy, broad-minded, intelligent and persistent movement to extend the use and push the sale of **honey**. Your **own** honey first, **all** honey incidentally.

Our members will advise one another of their successes and failures—plan new uses for honey—devise efficient selling schemes for advertising it, and support them. We will applaud when we like, kick when we feel disposed, suggest what appeals, and all smile together as we gather in the extra **money** dividends that are bound to accrue from the boosting.

The **BOOSTER** will carry this message to every member each month. Every number will feature good and efficient selling schemes. You will want them all. Wrap a quarter in paper and enclose it with your name and address, **at our risk,** for one year's subscription. $1.00 for five years.

GEO. W. WILLIAMS, Redkey, Indiana

TENNESSEE-BRED QUEENS

43 Years' Experience in Queen Rearing—Breed 3-Band Italians Only

	Nov 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1.50	$7.50	$13 50	$1.25	$ 6.50	$11 50	$1.00	$ 5.00	$ 9.00	$ .7	$ 4 00	$ 7.50
Select Untested	2.00	8 50	15.00	1 50	7 50	13 50	1.25	6.50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10 50	18 50	1.75	9 00	17.00	1.50	8 00	15.00
Select Tested	3.00	10 50	30.00	2.75	15.00	27.00	2 50	13.50	25 00	2 00	10.00	18.00

Bees by the pound, 1 lb., $1 25; 2 lb., $2.25; 3 lb., $2 75.
Nuclei (no queen) 1 fr. $1 50; 2 fr., $2.15; 3 fr. $2.75; 4 fr., $3.50; pure 3-band Italians.
Select queen wanted, add price.

Capacity of yard, 5000 queens a year Select queen tested for breeding, $5.00
The very best queen tested for breeding, $10

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed

JOHN M. DAVIS, SPRING HILL, TENN.

NOW IS THE TIME TO REQUEEN

Now is the time to get ready for next year. If you are just taking off a big crop of honey, your queens will be more or less worn out by their enormous egg production, and will profit by being replaced in many instances.

Possibly you look for a big crop next year. Now is is the time, then, to weed out your poor stock, your black stock, or your older queens. You should have young and vigorous queens to start the season next year.

Under any circumstances, weed out your poor stock.

We are in a position tournish pure stock, either leather colored, three-band, or golden, as you prefer, in very short order and at reasonable prices, and guartee safe arrival and pure stock.

Our prices for the balance of the season are as follows:

Pure Italian Stock

1	Untested	$ 1.00
6	"	4.50
12	"	8.50
25	"	16.50

Tested queens, $1.50 each.

Prices on larger lots on application.

Caucasian Queens

There is a growing demand for queens of this race of bees. We are prepared to furnish these queens at the same prices as above in lots of a dozen or less.

Write at once with order and remittance and state approximate date upon which you wish queens to arrive.

AMERICAN
BEE JOURNAL
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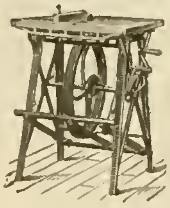
BARNES' Foot-Power Machinery



Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it."
Catalog & price-list free

W. F. & JOHN BARNES
205 Ruby St., ROCKFORD, ILLINOIS.

QUEENS OF QUALITY

Three-band, leather color, select untested. 75 cts each; $8.00 per dozen. Satisfaction guaranteed. Circular free.

J. I. BANKS, DOWELTOWN, TENN.

For Sale

UNTESTED
Three-Banded
ITALIAN QUEENS
50 cents each
N. FOREHAND
Ft. Deposit, Ala.

DON'T DELAY

Sending in your order for bees or queens. One pound bees with choice young Italian queen and directions how to build up to one or more colonies by fall. $2 50; six for $13.

Choice Italian queens untested. 75c each; six, $4.00; 25 for $15. Bees and Queens my specialty. Satisfaction guaranteed.

J. B. HOLLOPETER, Box 256, Pentz, Pa.

Fine Italian Queens

Select 3 and 5 banded stock; gentle, hardy and prolific honey gatherers. No disease. Price, 1 to 3, $1.00 each; 4 to 6, 90c each. Larger quantity, $10 per doz. Prompt deliveries. Pure mates Safe arrival and absolute satisfaction guaranteed. Send me a trial order'

CHAS. M. DARROW
Star Route, - Milo, Mo.

MARZ STRAIN OF ITALIANS

A distinctive strain of honey gatherers, with fixed characteristics, the result of 25 years careful breeding.

Untested queens	$ 1 00
Tested queens	2 00
Breeding queens	10 00

Write for circular.

WALKER & MARZIAN APIARIES
Box 373, New Albany, Indiana

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

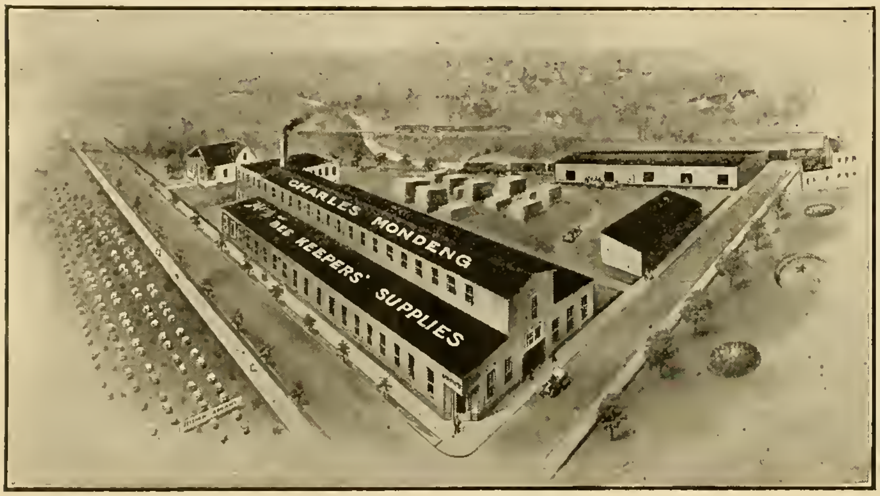
U.S.
MAIL
Mr. B. MAN BEEVILLE

"NUTMEG QUEENS"

BY RETURN MAIL

Leathered-colored Italians. Hardy, northern reared. Up-to-date methods. Until June 1, tested, $2.00. After $1.50. Untested, $1.00, 12 for $10. Large orders a specialty.

A. W. YATES 3 Chapman St. HARTFORD, CONN.



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Fine Sections

Thousands of Hives, the best ever made of white pine lumber, ready for prompt shipment. Don't miss them. My goods are guaranteed. A trial order will prove it. 200 colonies of Adels and Carniolans. If you want a square deal, send for my Catalog and Price List. I will pay highest market price for Beeswax in trade.

CHARLES MONDENG
146 Newton Ave. North
Minneapolis, Minnesota

Three Carloads of Bees

We are now in a position to take care of any and all orders for Bees, having recently received one carload of Bees from our Virginia apiary and another from Texas, while a third carload is now on the way. These are fully up to our usual standard; in fact, we consider them the finest stock of Italian bees that we have ever received. One of our friends in Canada writes us as follows:

AYLMER, ONT., May 25, 1915.

You advised me to start four years ago, at sixty years of age; have over eighty colonies in modern ten-frame hives, and many beautiful Italians from stock purchased through O B. A. from your firm. R. H. LINDSAY.

While from Mississippi comes this testimonial;

BAY ST. LOUIS, MISS.

THE A. I. ROOT COMPANY, Medina, Ohio—

Dear Sirs:—The five-frame nucleus I received last week arrived in fine shape and working fine. They are the gentlest bees I have ever handled. Do not need any smoker or veil with them. Thanking you for prompt shipment.

I beg to remain, yours truly, C. F. CARPENTER.

Italian bees in 1-lb. package, $2.00; 2 lbs., $3 25; 3 lbs., $4.00.
One frame nucleus without queen, $2.00; 2 frame, $3.00; 3 frame, $3.50; 5 frame, $4.50,

Colony in 8 frame dovetailed hive, no queen, $8.50.
Colony in 10 frame dovetailed hive, no queen, $9.00.

Untested Italian queen for any of the above, $1.00.
Tested " " " " " " 2.00.

THE A. I. ROOT COMPANY, Executive Offices and Factory, **MEDINA, OHIO**

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We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

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Pay You to Buy Bee Supplies Now

30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.

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START THE SEASON RIGHT

By using **Dittmer Foundation** the bees like it for it's made to just suit them, and is just like the Natural Comb they make themselves.

Send for prices on having your Beeswax made into Comb Foundation, which includes all freight charges being paid.

All other Supplies in stock

Gus Dittmer Company, Augusta, Wisconsin

ARCHDEKIN'S FINE ITALIAN QUEENS—3-BANDED

I have moved South to secure more favorable conditions and increased facilities for producing my well known queens and bees, and will do my best to keep up with orders. Cells are built in strong two-story colonies, securing big well-fed cells and mated to select drones. Every queen guaranteed first class. Safe arrival and satisfaction. No disease Ready April 15. Nuclei May 15. Order now for early delivery. Untested, $1.00 each; 6 for $5.50; doz., $10; 1-lb. bees, no queen, $1.50; with queen, $2.00; 2-fr. nuclei with untested queen, $3.50; 2 for $6.50; 5 for $15. Nuclei on Hoffman frames, wired from full sheets. First-class. Prompt attention to orders. Root's goods for sale.

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Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description. Shipping-cases, Section-holders, Comb-foundation, Smokers, etc.

Get my prices before placing your orders.
R. H. SCHMIDT
Rt. 3, Box 209, Sheboygan, Wis.

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BEE SUPPLIES

Best Sections, Best Shipping Cases
Best of all Supplies

Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready now. Send your name and get one.
H. S DUBY & SON, St. Anne, Ill., carry a full line of our goods.

AUG. LOTZ CO. BOYD, WIS.

Weber Service!

At this time of the year it is especially important that the Beekeeper be able to secure his supplies without delay. With the promise of an early spring and a heavy honey-flow this is doubly important.

Root's Goods and Weber Service

IS A COMBINATION THAT IS HARD TO BEAT

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C. H. W. WEBER & CO.,

2146 Central Avenue, Cincinnati, Ohio

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Rendering Combs

Cappings or slumgum is a "mussy" job at best. We are equipped for this work, and will render yours for you on shares. Send for our terms. For your share of the wax we will either pay you cash, ship you goods in exchange or manufacture it into

Dadant's Foundation

Known and liked the world over because it is just like the combs the bees make themselves.

Bee Supplies

We carry a large stock of all kinds of bee supplies. Drop us a card, making known your wants. We guarantee satisfaction in every way.

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HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

AUGUST, 1915

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OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

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THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

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Nothing less than 5 lines accepted.

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3 times 14c a line   9 times 11c a line
6 " 12c "   12 " (1 yr.) 10c a line

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Goes to press the 23d of the preceding month.

Celebrated Queens Direct from Italy

Bees More Beautiful, More Gentle, More Industrious, Long Tongued, The Best Honey-Gatherers.

PRIZES:—VI Swiss Agricultural Exposition, Berne, 1805. Swiss National Exposition, Geneva, 1896. Bee-Keeping Exhibition, Liege Belgium, 1896. Bee-Keeping Exhibition, Frankfort O. M. (Germany). Convention of the German, Austrian and Hungarian Bee-Keepers, August, 1907.

Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD

Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913

Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.

Oklahoma Agricultural Experiment Station.
STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.

(Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, $3.00; Selected, $2.00; Fertilized, $1.50; lower prices per dozen or more Queens, Safe arrival guaranteed. Write

Member of the National Bee-Keepers' Ass'n
ANTHONY BIAGGI,
Pedevilla, near Bellinzona,
Italian Switzerland.

This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

Please mention Am. Bee Journal when writing.

Bee-Supplies

LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

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IN the Province of Ontario alone there are 11,000 persons producing honey. A very conservative calculation means that there are 50,000 Queens. If you have Queens to sell to Canadian bee men, say so in The Canadian Horticulturist and Beekeeper, the only bee publication in Canada. It is the official organ of the Ontario and New Brunswick Beekeepers' Associations.

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Specimen copy on request.

The Canadian Horticulturist and Beekeeper
Peterboro, Canada

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The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre. We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

Everybody knows that by following the Campbell System of Soil Culture, crop yields have been doubled in every State of the Union from New York to California. Why not learn what the principles of the Campbell System are and adopt them? You can get all this and a thorough agricultural education without leaving home by taking a course in the

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You can have your choice of eight courses, Soil Tillage, Soil Improvement, Small Farming, Horticulture, Irrigation, Dry Farming, Farm Engineering and Animal Husbandry, all for a nominal tuition fee, no board to pay, no books to buy, everything furnished, and you can use your spare time while still running your farm or holding your job.

We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad, but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

Campbell Scientific Soil Culture Company Billings, Montana

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THE NEW MUTH 1915 CATALOG
Send for It—Watch for It—Wait for It

It is now out. If you have not received your copy, send for same at once. It is free for the asking. Everything you need is there—HIVES—BROOD FRAMES—FOUNDATION—SECTIONS—SMOKERS—BEE-VEILS—BRUSHES, Etc., Etc.

THE FRED W. MUTH COMPANY
204 WALNUT STREET "The Busy Bee Men" CINCINNATI, OHIO

P. S.—Ship us your old combs and cappings, and let us render them for you. Our process extracts the last drop of wax from the slumgum. This means money for you. Write for full particulars.

TEXAS QUEENS

Italians, the pure three-banded stock from imported mothers. Carniolans, the pure dark grey stock from Carniola. Queens will be ready to ship early in March. No disease. Prices, 75 cents each. $8.00 per dozen.

Circular free

Grant Anderson, San Benito, Tex.

LEGHORN BREEDERS!

Send in your subscription to **The Leghorn Journal** and keep posted on the progress of the Leghorn industry; as it is devoted exclusively to the different Leghorn fowls. Subscription price 50c per year. Special offer—Send us 10c and the names of five of your neighbors interested in Leghorns, and we will send you The Leghorn Journal for three months.

THE LEGHORN JOURNAL
Appomattox, Virginia

American Bee Journal

NEW BINGHAM
BEE SMOKER
Patented

Bingham Bee Smokers and Uncapping Knives

Have been on the market nearly 40 years, and are the standard in this and many foreign countries. Insist on the genuine improved articles from your dealer or direct from manufacturers.

Postage extra		ship. wt.	Price
Smoke Engine,	4 inch,	28 oz	$1 25
Doctor	3½ "	26 oz	.85
Conqueror	3 "	23 oz	.75
Little Wonder	2½ "	16 oz	.50
Smoke Engine or Doctor in copper 50c extra			
Uncapping Knives, improved Cold Handle			
Stan'd Length	8½ "	20 oz	.75
Extra long	10 "	24 oz	.85
Steam Heated 3 feet tubing		36 oz	2.50

A. G. WOODMAN CO.,
Grand Rapids, Mich.

Wanted

Choice Grades of
EXTRACTED HONEY
Send Sample and State Quantity
How packed and the lowest price you will take

We are always in the market for **Beeswax,** and pay highest market prices.

Hildreth & Segelken
265-267 Greenwich St., New York, N. Y

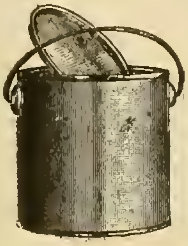
CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.
J. C. Frohliger, Berkeley, Calif.
Greater San Francisco

BUCKEYE CHAFF HIVES
DOVETAILED HIVES
Sections, Comb Foundation
Choice Northern-Bred Italian Queens
Bees by the pound
General Agents for Root's Goods in Michigan
SEND FOR 1915 CATALOG
M. H. HUNT & SON
Lansing, Mich.



FRICTION-TOP
PAILS

For Honey, Syrups, Sorghum, Etc., Etc'

GILLE MFG. CO.
Dept. B,
Kansas City, Mo.

LEININGER'S STRAIN OF ITALIANS

Have a record of 30 years. By careful breeding for 30 years we have succeeded in producing a strain of Italian bees that are unexcelled anywhere. Select untested, 80c each; 6, $4.00. Tested, one year old, $1,00; 6, $5 00. Satisfaction guaranteed.

FRED LEININGER & SON, Delphos, Ohio

Safety First

We wish to announce that we are breeding exclusively from two **QUEENS** that gave 300 pounds per colony in a 24-day honey flow in 1914 in the wonderful Tupelo region in Florida. The **QUEENS** we are putting on the market we know have no equal for honey production. **NOW** is the time to requeen your yards with this strain and be in shape for the season next year. **OUR QUEENS ARE WORTH MORE THAN WE PRICE THEM, BUT** we are anxious to place this stock on the market. With our years' experience we have never seen such **HONEY** producing stock. Don't think you won't get daughters from this stock, for we are breeding exclusively from these two queens. **OUR DRONES** are selected from our **CHOICEST** colonies and placed in our queen yard. **THESE QUEENS** are very beautiful in color, very gentle, and for **HONEY** production cannot be surpassed. **YOU** will be safe to place your order for this strain. **WE** can take care of any size orders. **PURE MATING, PROMPT DELIVERY, AND SATISFACTION GUARANTEED. EXPORT ORDERS CAREFULLY PACKED.**

PRICES AS FOLLOWING:

	1	6	12
Untested	$1.00	$5.00	$ 9.00
Tested	1.50	7.50	12.00
Select tested	2.00	9.00	15.00
One year old breeders from these mothers			10.00 each

1-Frame Nucleus with queen	$2.50
2- " " " "	3.50
3- " " " "	4.50
5- " " " "	5.50
10- " colonies " "	9.00

Order Now—Don't Delay

The J. E. Marchant Bee & Honey Company
HARTVILLE, OHIO

American Bee Journal

PROTECT YOUR BEES AGAINST FOULBROOD

By using "falcon" queens

One of the prominent beekeepers of New York State writes :

"The queens received from you this season have been perfectly satisfactory. For cleaning up foulbrood they cannot be beat. We could not ask for any better queens, and I have not heard any fault found from parties I have sold to."

Can you afford to run the chance of letting foulbrood invade your apiary when **"Falcon"** Italian queens are no more expensive than the ordinary blacks and hybrids which oftentimes cause a catastrophe in an apiary by being so susceptible to foulbrood.

PRICES OF "FALCON" QUEENS—THREE-BANDED ITALIANS, GOLDEN ITALIAN AND CARNIOLANS

After July 1	1	6	12	After July 1	1	6	12
Untested	$ .90	$5.00	$ 9.00	Tested	$1.50	$ 8.00	$15.00
Select untested	1.00	5.50	10.00	Select tested	2.00	10.00	18 00

SAFE ARRIVAL AND SATISFACTION GUARANTEED **DEALERS EVERYWHERE**

RED CATALOG, Postpaid - "Simplifed Beekeeping," Postpaid

W. T. Falconer Mfg. Co., Falconer, New York

Where the good bee-hives come from

GOLDEN ITALIAN QUEENS

Mr. Beekeeper, do you want the best queens that money can buy? If so, try this strain of Goldens that for fifteen years has been a leader. All queens reared from superior Golden mothers and mated with select Golden drones; are large, vigorous and prolific; the bees gentle and hustlers, and are noted throughout the United States as a disease-resisting strain. Mated from strong nuclei, three to five full Langstroth frames. No disease. Safe arrival (U. S. and Can.), purity of mating and satisfaction guaranteed. Write for descriptive circular.

PRICES OF QUEENS

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1.		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1.50	$ 7.50	$13.50	$1.25	$ 6.50	$11,50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6,50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	3.00	16.50	30.00	2.75	15.00	27.00	2,50	13.50	25.00	2.00	11.00	18.00

Breeders, $5.00 to $25.

BEN G. DAVIS, Spring Hill, Tennessee

Please mention Am. Bee Journal when writing.

CLOSING OUT SALE

—OF—

BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.35
Danzenbaker Bee-Smoker ($1.00)	.80

GEORGE W. YORK, SANDPOINT, IDAHO

ITALIAN QUEENS NORTHERN BRED

Superior winterers, second to none. My free list explains it all. Untested, 75c; select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents; "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, GLENWOOD, MICH

Get the Atchley Queens

It took 30 years to produce the good qualities obtained in this strain of three banded bees. If you haven't some of this stock in your apiary now, you will have, some day.

Untested, $1.00 each, or $10.00 a dozen. After April 15, 75c each, or $8.00 a dozen. Good tested ones $1 50 each. I can sell you bees or nuclei cheap; write for prices. Satisfaction of all bees and queens guaranteed.

Wm. Atchley, Mathis, San Patricio Co., Texas.

Miller's Strain Italian Queens

By RETURN mail after June 5th to 10th, or money refunded. Bred from best RED-CLOVER strains in the U. S. In full colonies from my SUPERIOR BREEDERS; northern bred for business; long tongued, three banded, gentle, winter well, hustlers, not inclined to swarm; roll honey in. One untested, 75c; 6, $4 00; 12, $7.50. One select untested, $1.00; 6, $5.00; 12, $0 00. A specialist of 18 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, Brookville. Pennsylvania

CARNIOLANS ONLY

Carniolans build up fast in the spring, are very prolific, VERY GENTLE, cap honey very white, enter comb-honey supers readily, and gather almost no propolis, and are the BEST of honey gatherers. Ten years' experience in honey producing and breeding these bees.

Untested queens, $1.00 each;	dozen,	$ 9 00
Tested "	1 50 " "	12.00
1-pound package with queen		2.50

Ask for our free paper, "Superiority of the Carniolan Bee."

ALBERT G. HANN, Clinton, New Jersey

The "Booster's Club" is Not for "Dead Ones"

You are cordially invited to join the **"BOOSTER'S CLUB"** so that you may assist in a uniform, happy, broad-minded, intelligent and persistent movement to extend the use and push the sale of **honey.** Your **own** honey first, **all** honey incidentally.

Our members will advise one another of their successes and failures—plan new uses for honey—devise efficient selling schemes for advertising it, and support them. We will applaud when we like, kick when we feel disposed, suggest what appeals, and all smile together as we gather in the extra **money** dividends that are bound to accrue from the boosting.

The **BOOSTER** will carry this message to every member each month. Every number will feature good and efficient selling schemes. You will want them all. Wrap a quarter in paper and enclose it with your name and address, **at our risk,** for one year's subscription. $1.00 for five years.

GEO. W. WILLIAMS, Redkey, Indiana

Quality Hill Queens

"The Queens You'll Eventually Buy"

Quality Hill Queens are of a famous strain, greatly improved. All cells are built in 10-frame colonies, brimful of bees, and during a continuous honey flow. For hardiness, gentleness and honey gathering qualities, they are better than most. Four frame nuclei used for mating. Many report them very resistent to European Foulbrood. No disease. Italians.

Our Guarantee—All queens will reach you alive, in good condition, purely mated, and will give satisfaction. Queens which prove to be injured in the mails will be replaced if returned. Reference, Plainfield, Ill., State Bank.

	1	6	12		1	6	12
Untested	$ .80	$4.00	$7 50	Tested	$1.50	8 00	$15 00
Select untested	1.00	5.00	0.00	Select tested	2 50	10,c0	18.00

Breeders $4.00 up

K. E. HAWKINS, Plainfield, Illinois

QUEENS—Golden and Leather-colored

We are in position to fill your orders for queens and bees from date of this "Journal" until October 1, 1915, at following prices:

Prices of one and over	1	6	12
Virgins	$ .50	$2 75	$ 5 00
Untested	.85	4.50	8.00
Select untested	1.00	5.00	9.00
Warranted	1 10	5.50	0.50
Tested	1.50	7 50	13.50
Select tested	1.75	9.00	15.00
Tested breeding	3.00		
Select tested breeding	5.00		
Ex. select test. breeding	7.50		

1 frame nuclei without queen	$1.50
2 frame nuclei without queen	2.75
3 frame nuclei without queen	3.50
Colony 8-frame hive without queen	7.50
Colony 10-frame Danz, without queen	0.50
Colony 10-frame hive without queen	0.50

When queens are wanted with nuclei and colonies, add queens at prices as above for queens.

Bees by Pound F. O. B. Penn., Miss.

½-pound package, wire cage	$1.00
1-pound package, wire cage	1.50
2-pound package, wire cage	2.00

No queen supplied at these prices. Make selection and add to above prices.

All bees and queens shipped from our yards at Penn, Miss. We have no disease, nor do we know of any diseased bees in this State. Our queens are bred from highly selected stock of uniformly marked bees; for gentleness and working qualities they are unsurpassed; they are world-beaters as honey-gatherers. We consider these queens the equal of any on the market, and years of favorable reports substantiate this claim. In ordering you have the choice of selecting three-banders or goldens. Prompt attention given to all orders and inquiries. Read The A. I. Root Company's endorsement below.

MEDINA, OHIO, February 6, 1914.

THE PENN CO., Penn, Miss.

Gentlemen:—Replying to yours of February 3, we would state that we have bought a large number of queens of you. We have found them uniformly marked, and of a good stock; in fact, they are first-class in every respect. Another thing, we have always found that you make prompt deliveries, or give us notice promptly when such deliveries could not be made.

THE A. I. ROOT COMPANY,
Per E. R. Root, Vice-president.

Our record last year, about 10,000 queens, and shipments to all important foreign countries; every State in United States and Canada, and only two complaints, which we readily made good. Try us. We are sure to please you.

Our QUEENS all around the world. The sun never sets on a Penn Co.'s queen.

THE PENN COMPANY, Penn, Lowndes County, Mississippi

Representatives of The A. I. Root Company, and Queen Specialists.

$ 2 $ A MONTH

buys a Standard Typewriter your choice. Late Style Visibles Back Spacer. Tabulator. Two-color Ribbon. Every modern operating convenience. My prices lower than other cash prices. Perfect Machines. Fully guaranteed, Ask for Special. Five Days Free Trial Offer.

H. A. SMITH
230-231 N. 5th Ave., Chicago, Illinois

Three-Banded Italians

GET THE BEST

Twenty years selection and breeding brings Murry's Queens above the average Untested, 75c; 6, $4 00; 12, $7.50. Tested, one, $1.00; 6, $5.00; 12, $10. Select tested, one, $1.50; 6, $8.00; 12, $15.

H. D. MURRY, MATHIS, TEXAS

Beekeepers' Supplies

Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

J. NEBEL & SON SUPPLY CO.,
High hill, Montg. Co., Mo.

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, $1.00; 6, $5.00; 12, $0.00
Select untested, $1.25; 6 $6.00; 12, $11.00

Safe arrival and satisfaction guaranteed. Circular free. I am now filling orders by return mail.

J. P. MOORE,
Queen-breeder Rt. 1, Morgan, Ky.

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

PORTER BEE ESCAPE

PORTER
BEE ESCAPE
PATENTED

SAVES
HONEY
TIME
MONEY

For sale by all dealers.
If no dealer, write factory
R & E. C. PORTER, MFRS.
Lewistown, Ill., U. S. A.

Lewis Sections

NOT ONE BAD IN THIRTY THOUSAND

One of our customers tells that he has put up (folded) thirty thousand Lewis Sections in a season, and not found one section in the whole lot that was not perfect.

Can we mention any more convincing evidence of QUALITY? Can you say the same of even five hundred of any other make?

——MATERIAL——

Lewis Sections are made of Wisconsin Basswood—the best material known for sections. The stock used is first carefully selected by the lumber people, then when it reaches the Lewis factory it is again sorted by the Lewis Inspector' leaving only the whitest material to go into Lewis Sections.

——THE V-GROOVE——

The most difficult part to make right in a section is the V-Groove which allows it to fold up into shape—if it is not cut deep enough or if it is cut too deep, the section will break when folding or will be loose at the corners. The Lewis Section expert has been attending to this part of the work for over thirty years—Lewis sections are perfectly grooved.

POLISHING AND DOVETAILING

Lewis Sections are polished on both sides in a double surface sanding machine, which was designed in the Lewis Plant especially for the purpose. The dovetailing of the ends of Lewis Sections is smooth, clean and just right.

——PACKING——

Lewis Sections are packed in a tight wooden box entirely enclosing contents—no discoloration from air or sun can occur, no matter how long they are carried in stock—this package is strongly braced at all corners insuring delivery in good order.

Insist on Lewis Sections—Look for the Beeware Brand

G. B. LEWIS COMPANY

MANUFACTURERS

Watertown, - Wisconsin

AMERICAN
BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

Published Monthly at $1.00 a Year, by American Bee Journal, First National Bank Building

C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., AUGUST, 1915 **Vol. LV.—No. 8**

EDITORIAL COMMENTS

The Front Cover Picture

The picture on our front cover shows that basswood trees may be planted by young beekeepers with expectation of results, both in shade and honey yield. This tree, planted by E. J. Baxter, president of the Illinois State Beekeepers' Association, in front of his home, in 1884, is now 66 inches in circumference at the trunk, and has been for a number of years producing abundant bloom. This summer it was profusely loaded. The Baxter home is surrounded with a number of similar trees.

Flight of Bees

Did you ever spend time in watching the bees returning to the hives in a thick stream on a day when a honey-flow is on? It's a bit fascinating when you have in mind the thought that every bee that passes means another little drop added to your crop of honey. Another question. Did you ever notice whether the number of outward bound bees was equal to the number inward bound? The writer has opportunity to watch bees where those going north pass between two buildings, condensing the stream. They seem to fly a bit slowly, and not very high, many of them not more than 8 or 10 feet from the ground. But they seem to be all returning, seldom one going. If an occasional bee is seen going, it flies very swiftly. Do the bees, as they leave the hive, fly higher than when returning with their loads, do they fly around some other way, or do they fly so swiftly that they are not seen?

While watching their flight, one is very likely to ask, "How many trips do they make in a day? How long does it take for a trip? How long does it take for a bee to unload in the hive?" Various estimates have been made in reply to these questions, by no means all alike. Indeed, one would naturally suppose that a trip would take a good deal more time with a sparse yield at a considerable distance than with a heavy yield close by. The time of unloading ought not to vary much. About a year ago an interesting account was given in Praktischer Wegweiser of the patient observations of a Mr. Walter. He marked several bees, each a different color: white, yellow, orange, green, blue, and red. With a timepiece and tablet before him, and pencil in hand, patiently he sat beside the hive from 6 o'clock in the morning until 7 in the evening; his meals brought to him, and carefully registered the time of departure and return of each bee. As a result of his observations he reports that a bee makes in a day, not 40 trips, as some have said, nor yet 25, but only 10; that each trip takes from half an hour to two hours, averaging an hour; and that the time spent in the hive between trips is from 5 to 10 minutes.

Probably most beekeepers will prefer to accept his figures rather than to attempt to verify or disprove them by a like watch of 13 long hours beside the hive.

Obituary

L'Apicoltore, in its June number, announces the death of Andrea De Rauschenfels, its former editor, whose autobiography we published in our August, 1913, number. We reproduce the photograph of this eminent apiarist and writer. Besides ably filling the editorial chair of L'Apicoltore for 25 years, he pulished "The Bee and Its Culture," with an atlas of bee anatomy, a reproduction of the lithographic work of Barbo and Clerici.

THE LATE ANDREA DE RAUSCHENFELS

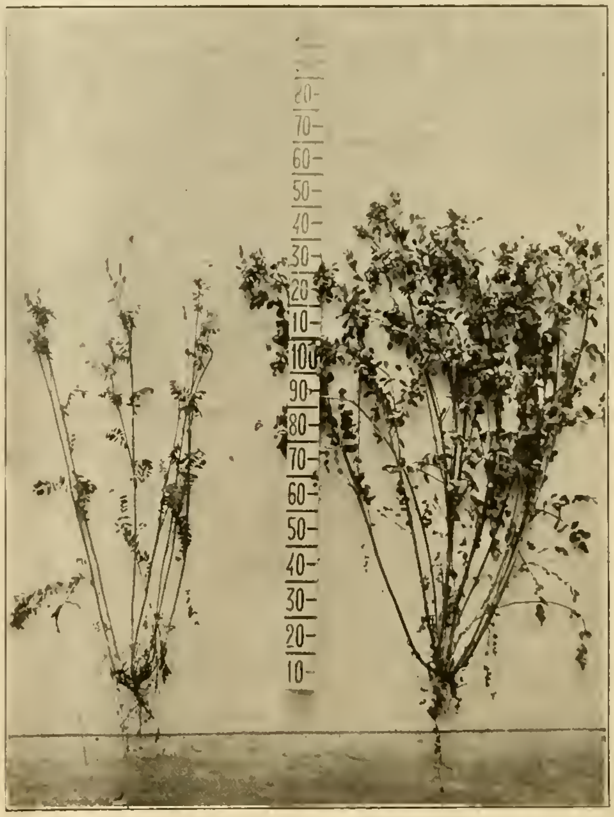
Mr. De Rauschenfels retired from active life at the end of the year 1912. He died at his home in Noceto, Italy May 21, 1915, aged 87 years.

More About the Sulla

Since the publication of the article from D. Barone in the June number of the Bee Journal, page 199, concerning this honey plant, we have received, from our good friend A. Cotini, manager of the Federazione Apistica Italiana, of Ancona, some excellent photographs of the "sulla" (*Hedysarum coronarium*) and of the "crocetta" (esparcet or sainfoin, *Onobrychis sativa*), side by side, to show plainly the difference between them. A 2-meter guage shows the height of the plants. As the meter represents 39.37 inches, the sulla shown is about 59 inches high, or nearly 5 feet. The sainfoin is a trifle shorter.

There is, in the Rocky Mountains, from Colorado northward, an American variety of the *Hedysarum*, *H. americanum* or *boreale*. If this plant yields honey, perhaps some of our readers would be able to send us information concerning it.

Our thanks are extended to friend Cotini for his kindly attention in sending the photographs.



CROCETTA OR SAINFOIN

SULLA (*Hedysarum coronarium*)

Italian Bees

The June 10 number of the British Bee Journal contains a long article by Herbert Mace, which is an indictment of the Italian bees. He is not the first writer of England who condemns the Italians, for these bees seem to prove unworthy with our British cousins. Perhaps with them as with the Swiss, the climate causes the difference. This writer acknowledges some good points in the Italians, that they work earlier and later in the day than the blacks, for instance. But he at once says that this is a "matter of individual characters." He holds that the Swiss have overwhelmingly found them more subject to foulbrood than the blacks. But he has not taken notice of the fact that the Swiss had not as yet drawn a distinction between European and American foulbrood. It is in the European foulbrood only that the Italians are superior to the blacks. He speaks of their "inveterate devotion to robbing." We believe that this must have been "an individual characteristic" in the colony or colonies which he owned, for in this country wherever a few bees are found lurking around corners, they are almost sure to be blacks, if there are any in the apiary. On the other hand he fails to take notice of the fact that the pure Italian bees defend themselves better than the common bees against robbers and moths.

200
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10

SULLA

At the last he recognizes that pure Italians are more amiable than the blacks and also more prolific. To our mind the principal and most weighty argument given against the Italians is the comb-sealing habit of closing the cells with cappings against the honey which gives it a watery appearance. A matter of appearance and no more.

Illinois Bee Appropriations

The Legislature has again passed the laws and appropriations for the Illinois State Beekeepers' Association and the inspection of apiaries. Inspector Kildow is continuing the good work and spreading the knowledge necessary to prevent the scattering of foulbrood over the land. Unluckily the first move in this direction was taken much too late. There was a time when foulbrood was practically unknown in Illinois. Had measures been taken, at that time, similar to those we now have, it is quite probable that the new generation of beekeepers would hear no more about foulbrood than we did 40 years ago.

We have also some hopes of seeing a regular course in beekeeping established at the State University. This would help very much in educating the prospective apiarists. The danger to bee-culture lies with the man who owns bees but knows nothing about them and depends upon the old idea of "luck."

In the War Zone

In our July number we published a letter from Lieutenant Alin Caillas, in the war zone of France. We have just received from him the two accompanying photos from a French section devastated by the German armies and regained by the French. The first picture represents a damaged apiary partly reorganized by him, the other the ruins of the church of the little village of Louppy-Le-Chateau in the same locality and in which "not a house is standing." He writes that the soldiers, in their spare moments, help the remaining inhabitants with their crops.

A DEVASTATED APIARY IN THE WAR ZONE

ALL THERE IS LEFT OF THE CHURCH AT LOUPPY LE CHATEAU

Honey Values

According to the Department of Agriculture Monthly Crop report for May 10, 1915, the average price of comb honey for the past 3 years has been 13.7 cents per pound. The same report makes the price of extracted honey during the same length of time 11.4 cents. This is only a trifle more than 2 cents per pound extra for comb honey. If this be correct it is more profitable to produce extracted honey, for the cost of production is much less and the amount harvested much more.

Beekeeping in British Columbia

We have before our eyes Bulletin No. 30 of the Department of Agriculture of this province "Guide to Beekeeping" 2d edition by F. Dundas Todd, our esteemed friend and contributor.

It is a pamphlet of 60 pages, neatly gotten up, which gives the elementary requirements to succeed in the business of beekeeping. White clover, alfalfa and sweet clover appear to be the main honey resources of that region. Owing to the comparative mildness of the climate in winter, the bees are generally wintered outdoors.

Itinerant School in Beekeeping

The reader will find on another page the announcement of a four day school for beekeepers, under the auspices of the Massachusetts Agricultural College in conjunction with the Essex County Agricultural School. The dates are August 4-7, the place of meeting Hathorne, Mass. The matter is in the hands of our well-known and indefatigable friend, Burton N. Gates, President of the National Association, of Amherst, with the help of Geo. W. Adams, a prominent beekeeper of Essex County; S. I. Davenport instructor in the Essex Co. Agricultural School; Fred. A. Smith, director of the same school and Gladstone H. Cale deputy apiary inspector. All communications regarding this subject should be addressed to F. A. Smith, Hathorne, Mass

We send our heartiest good wishes to these pioneers.

A Successful Northern Apiarist in Alabama

The "Montgomery Advertiser" of Sunday, June 13, contains a very interesting article concerning Mr. W. D. Null, a former Illinoisan, who, with his seven sons, is making a success of apiculture on a large scale near Demopolis, Alabama. Mr. Null went to Alabama 6 years ago, bought a run-down farm, improved it, went largely into beekeeping and last year produced nearly 50,000 pounds of sweet clover honey, which he advertises and sells himself successfully. Mr. Null is a hustler and proves it.

MISCELLANEOUS NEWS ITEMS

Tri-State Field Meet at Hamilton

As announced in the June number, page 188, and in the July number, page 247, there will be a field meet at Hamilton, Ill, Sept. 7, followed by a conference of inspectors at Keokuk the next day.

Many noted beekeepers are expected. We can already announce the following: Dr. L. H. Pammel and C. E. Bartholomew, of Ames, Iowa, F. W. L. Sladen, of Canada, F. E. Millen, of Michigan, N. E. France, of Wisconsin, E. R. Root, of Ohio, J. W. Stine, F. Coverdale and Dr. Bonney, of Iowa, Prof. Jager, of Minnesota, E. J. Baxter, Jas. A. Stone and A. L. Kildow, of Illinois, and E. F. Phillips, of Washington, D. C. FRANK C. PELLETT.

Minnesota Premiums Open to All

In the July number of the American Bee Journal it is stated that the Minnesota Fair is again making the best offers of any State Fair in the way of cash premiums. I would like to have your readers know that these premiums are offered to anyone who wishes to exhibit, regardless of where they reside and the Minnesota State Fair Association is glad to send a premium list to anyone interested without charge.

If anybody wants one address Sec. J. C. Simpson, at Hamline, Minn.

Besides having a large honey and bee supply show we expect to have also a meeting of beekeepers on Thursday, Sept. 9th, at 2 p. m. in the Bee and Honey Building at the State Fair. Every beekeeper visiting the Minnesota State Fair should make it a point to be there.

P. J. DOLL, *Supt.*
Bee & Honey Bldg., Minnesota State Fair.

GAETANO PIANA
The apiarist and queen breeder mentioned in the March number; now a Lieutenant in the Italian army

Western New York Meeting

The Western New York Honey Producers' Association will hold a picnic and field meet on Saturday, August 7 at the apiary of John N. DeMuth, Pembroke, N. Y., which is on the main State road between Buffalo and Batavia, or 14 miles west of Batavia. Demonstrations and talks on beeculture will be in order. Bring your basket lunch. Every one interested in bees and honey is invited to attend.

WM. F. VOLLMER, *Sec.-Treas.*

Fire Damages Bee Supply Factory

The bee supply factory and store house of Robert G. Coombs of Guilford, Vermont, were damaged by fire, cause unknown, with a loss of about $15,000 recently, partly covered by insurance.

Mr. Coombs recently took over the business formerly conducted by Earl M. Nichols of Lyonsville, Mass. He expects to keep on filling orders as formerly and will supply his trade with but little delay.

School for Beekeepers

A school for beekeepers will be held on August 4, 5, 6, 7, 1915, at Hathorne, Mass., under the auspices of Massachusetts Agricultural College, Extension Service, the Essex County Agricultural School Co-operating.

This school is intended to be of help not only to the professional beekeeper, but to market gardeners, fruit growers, growers of cucumbers under glass, small fruit producers, cranberry culturists, managers of estates and institutions, science teachers, librarians and persons contemplating beekeeping as well.

FIRST DAY
August 4, 10 A. M.

1 Establishment of Bees in Essex County------Dr. Burton N. Gates
2 1:30 p.m.—Demonstration and explanation of simple beekeeping—equipment; its preparation and use as hives, supers, sections, frames, traps, etc.—Dr. Burton N. Gates, Mr. Gladstone H. Cale.
3 Instruction in handling bees (demonstration with live bees) Dr. Burton N. Gates

SECOND DAY: FRUIT GROWERS' AND MARKET GARDENERS' DAY
August 5, 10 A. M.

4 Demonstration: Maintaining bees in cucumber houses. Mr. Gladstone H. Cale
5 The Control of the "Moth." Dr. Burton N. Gates
6 Demonstration of handling bees. Mr. Gladstone H. Cale.
1:30 P. M.
7 Necessity for Bees in Vegetable and Fruit Production. Mr. S. L. Davenport
8 The Orchard Apiary; its Establishment. Mr. Gladstone H. Cale.
9 Question box.

THIRD DAY
August 6, 10 A. M.

10 The Races of Bees. Dr. Burton N. Gates
11 The Colony; its Development and Members. Mr. Gladstone H. Cale.
12 The Products of the Hive. Mr. Gladstone H. Cale.
1:30 P. M.
13 Honey Sources; Important Bee Forage. Mr. Fred A. Smith., Director.
14 Making a Start with Bees. Dr. Burton N. Gates

FOURTH DAY: BEEKEEPERS' DAY—SPECIAL PROGRAM
August 7, 10 A. M.

15 Handling of swarms. Mr. Gladstone H. Cale.
16 Increasing the bees. Dr. Burton N. Gates
17 Transferring a colony of bees to a modern hive. (Demonstrated) Mr. Gladstone H. Cale.
18 Discussion of Bee Diseases and Their Treatment. (Demonstrated). Mr. Gladstone H. Cale.
19 Requeening; Italianization. Mr. Geo. W. Adams, Rowley, Mass.
20 Suggestions for Honey Production. Mr. Gladstone H .Cale.
21 Question box.

If the beekeepers have special subjects which they desire discussed or demonstrated, they will please communicate in advance with Mr. Fred A. Smith, Director of the school.

There will be beside bees in glass and other hives, a display of the best and most simple beekeeping equipment.

Teaching Beekeeping in Y. M. C. A. Schools

In March, 1914, the Y. M. C. A. Schools of Louisville, Ky., prepared and offered a course in Bee Culture. Mr. J. O. Dunkin, B. S., a man of wide experience in Bee Culture, was secured to head the course. In addition, an advisory committee consisting of the most prominent and successful bee men in the city was secured to co-operate and advise. The course was started with a free open lecture, admission to which was by signed ticket. Moving pictures relating to the bee industry were also used on this opening night. Nearly 200 people were present at the opening session. Following this a class was formed in which 13 students were enrolled. The course was successful and the students greatly interested. The result was that the bee industry was considerably stimulated throughout the entire community.

This year a similar but somewhat extended course was offered. In addition to the regular lecture lessons offered last year, five practical lessons conducted in the apiary were added to the course. These lessons were held on Saturday afternoons. This course was again successful though the enrollment was not quite so large as last year.

So far as we know this is the first course in Bee Culture conducted by any Y. M. C. A. in North America. Letters of inquiry regarding the course were received from parties in New York City, El Paso, Texas, and other places asking the Louisville Y. M. C. A. to furnish them with the material presented in the course.

CLASS IN BEE-CULTURE, Y. M. C. A. SCHOOLS, LOUISVILLE, KY.,
Enrolling business men, lawyers, ministers, piano tuners. First Y. M. C. A. in North America to offer and conduct a course in beekeeping

J. P. MARTINE FIRST KEPT BEES ON THE ROOF OF HIS COAL SHED.
Photo by Louisville Y. M. C. A. Schools

A Correction

I would like to correct a mistake which appeared (on page 242, July issue) in connection with an article which I sent you. This is a picture of Mr. Pratt's apiary at Wethersfield, Conn.

It would be too bad to let this go by unnoticed because we are indebted to Mr. Pratt for a "good time" when the Connecticut Beekeepers Association met at his home last summer, and I was so well pleased with the appearance of his apiary that I took the picture of it and sent it to you.

A. E. CRANDALL.

Berlin, Conn.

Texas Branch Association Formed

The Beekeepers of San Patricio County met at the court house on June 26 and formed an association, said association to be known as the San Patricio County Beekeepers' Association. The following officers were elected: President, G. B. Stevens, Sinton; Secretary-treasurer, C. R. Park, Sinton; Directors: B. Merrill, Sinton; Prof. J. L. Allen, Odem; B. M. Caraway, Mathis. Committees on diseases of bees: W. N. McCleary, Sinton; H. D. Murry, Mathis; H. H. Phelps, Odem; Inspector of bees, Wm. Atchley, Mathis.

The meeting adjourned, to meet again on the 25th of September, 1915, at the court house in Sinton, at 1:00 P. M. A full attendance is requested, as matters of importance will come before that meeting.

Conference of Apiary Instructors in December

After making a canvass of all the Agricultural Colleges in the United States and Canada, Prof. Morley Pettit of Ontario has found that there are about fifteen Colleges giving instruction in Apiculture, and about as many more where they are interested in the subject, and are thinking of putting it in sometime in the near future. A conference of men who are already engaged in giving instruction or conducting experiments in Apiculture in Agricultural Colleges, or are likely to take up that work in the near future is being arranged to be held in conjunction with the meeting of the Association of Economic Entomologists at Columbus, Ohio, next Christmas. The purpose of this conference will be to develop and standardize methods of conducting this particular line of work.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Our Apiary During the Spring of 1915

It may be of some interest to the sisters, especially the beginners, to have some items concerning our apiary. Those who are not beginners may be interested in some things a little out of the usual. Certainly the weather has been, not only a little, but a good deal, out of the usual. And weather means much to the bees.

The fall of 1914 was warm, and the bees were taken into the cellar Dec. 8, although generally they are cellared in November. Two men took less than 3 hours to carry the 101 in. The blooming of the red or soft maple is usually the signal for taking bees out of cellar. This spring a few blossoms were out March 25, when it immediately turned cold, and they did not come out till April 6, making 119 days confinement. A few dandelions appeared 4 days later.

The colonies were strong, and by April 30, with a little equalizing, each colony had at least 4 frames of brood. Many had 6 or 7. That's better than usual. By that time, either on acount of queenlessness, or for some other reason, the 100 had been reduced to 92.

The last week in April was more like June, the thermometer daily standing at 80 to 86. Then it turned the other way, being cold and wet, and by the time June came it was more like April.

After the equalizing, which had less work than usual, the bees received very little attention. Dr. Miller had made up his mind in the winter that no matter what the season, we would not try to see how much honey we could get, but how little work we could do. And he stubbornly stuck to it.

May 11 an upper story with three or four empty combs was put on each hive. That served as a sort of safety-valve; if the bees needed room for either brood or honey they could go up stairs; if they didn't need it they could let it alone. They let it alone. It wasn't the best thing, for it left a great space overhead for the bees to keep warm. It would have been better to have put the empty combs below; but it made less work to put them above, and so that was done.

May 27 the first blossom was seen on white clover, and also on alsike. The rule is that storing on white clover begins 10 days after the first blossom, so supers were put on. In a few cases a little honey was in these combs, but in no case was there any brood. The strange thing about it was that where a little bit of honey was stored in these upper combs, no honey was found in the brood-chamber, disproving the theory that bees always fill any vacant space in the lower story before storing above. But there is a difference between drawn combs and foundation, and like enough bees always fill the brood-chamber before beginning in the super if the super contains only foundation.

But although clover bloom was abundant, the prevalence of bad weather awakened the suspicion that instead of storing in supers the bees might not be gathering enough for their daily needs. A look into a few hives confirmed the suspicion. Brood-chambers were absolutely destitute of honey. There was the possibility — indeed the hope—that a change would take place within 24 hours, but in less time than that the bees might begin eating brood, so they must be fed at once, at least a little. So we poured upon the tops of the sections as much heavy syrup as we could without having it run out of the hives. A slouchy way, to be sure, with the chance that it might need repeating in 48 hours; but we did what required least work, and took the chances.

June 21 the bees appeared to be working with frantic eagerness. There was abundance of white clover, and examination showed that bees were also working quite plentifully on alfalfa. Never before had the like been seen. Generally not a bee is found on it, and never more than a very few. No telling why it was so different this year. It may be here explained that the time for cutting alfalfa is when the new growth is started at the bottom an inch or two, without regard to whether bloom is just beginning or is well started. But the weather had hindered the cutting, and when June 21 brought a bright day the mowers started on the alfalfa. On no day since then have the bees seemed to work so hard, although one cannot definitely measure the activity of the bees, and "things are not what they seem" in all cases.

Considering the character of the weather it hardly seemed the bees should think of swarming, and yet two of the neighbors had swarms. So June 21 and 22 we went through the hives looking for queen-cells. A few were found and destroyed. Conditions in the hives were out of the usual. A few colonies had only eggs and sealed brood, showing that for a time the queen had stopped laying. Of course that was a loss. But in most cases the frames were fuller of brood than usual. Indeed it was a remarkable sight. Brood extended clear to the topbar and to the bottom-bar and

The ladies who assured the success of the Cedarédge beekeepers field meeting and picnic: 1. Mrs. Parker cares for 68 colonies. 2. Miss Julia Schraft owns and cares for 65 colonies. 5. Mrs. J. G. Jewel. 6. Mrs. W. S. Picket. 7. Mrs. Geo. Eckert.

stranger still, from endbar to endbar, and that in frame after frame, and in hive after hive. In one hive Dr. Miller estimated that there were 6 frames that were seven-eighths filled with brood and the other two frames more than half filled. That would make nearly 50,000 cells of brood.

Such a state of things would not be possible ordinarily, for a larger proportion of each comb would contain stores. But in this case everything gathered was used up as fast as gathered, and so there was no crowding out of brood by stores. Often we have had colonies with more brood, but it would be in more than one story. Probably never before did we have as much brood in a single story of 8 frames.

June 28 the first swarm issued, the latest issuing of the first prime swarm on record in this locality.

June 29 we began looking through the hives for cells the second time. In a number of cases we found the super filled and the bees suffering for room. This happened the more easily because the first super put on each hive was entirely filled with bait sections, nearly fully drawn out. We did a rather wholesale job in the way of adding supers. To most of them we gave 2 apiece, and to a few 3. An empty super was put below the filled super, and another on top. The one on top acted as a safety valve; if needed the bees could occupy it, and if not needed they could let it alone. An advantage in putting extra supers on top is that if a starter is a bit insecurely fastened, the bees will fasten it if put on top, whereas if put below the weight of the bees will break it down. Besides it makes the work a little easier to have such abundant room, for then such close watching is not necessary.

An inventory July 1 showed there were 7 colonies with one super each, 11 with 2, 69 with 3, and 6 with 4. That figures up 93 colonies, for we had made one new one. That looks like a big lot of super-room if the flow should stop; but there was no great fear of that, for the ground had been so thoroughly filled with water that the clover could not dry up for some time. At any rate, "Nothing ventured, nothing won."

Worth Living In

One that claims that he knows about it
Tells me the earth is a vale of sin;
But I and the bees, and the birds, we
doubt it,
And think it a world worth living in.

—*The Book of Good Cheer.*

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Alfalfa and the Honey Flow

Beekeepers watch the alfafa as closely as, if not closer than the farmers themselves. It is by far the most important honey source in the west. Several conditions in the growing of alfalfa look favorable to the beekeepers.

A number of years ago, complaints began coming in to the Colorado Agricultural College that alfalfa was not doing as well as formerly; that the stand was running out and a less thrifty growth was being made, consequently the tonnage was falling off. The Colorado Agricultural College began investigations by collecting all the different varieties obtainable. By carrying on these investigations and collections and testing out each variety it was found that the one hundred and eighty varieties divided themselves into two great groups, the northern or hardy, and the southern or less hardy varieties. It was found that the lack of sufficient seed had caused large amounts of the southern varieties to be sown. The result was that the southern varieties winter killed and ran out, from pasturage, to a much greater extent than the hardy northern varieties.

Of all the hardy kinds it was found that the Grimm and Baltic varieties surpassed all the others from the fact that they form the crown below the surface of the ground and are less subject to freezing damage and injury from over-pasturage.

These varieties bloom more profusely and begin blooming before complete growth is made. This makes it possible for the beekeeper to obtain some honey, even though the alfalfa is cut upon making full growth.

Another point in favor of the beekeepers is that the fast multiplying alfalfa meal mills are, to a certain extent, increasing the acreage in alfalfa and they are desirous of obtaining hay with blossoms on—they do not desire the alfalfa cut before it blooms, as a general rule.

County Agriculturists and Apiary Inspectors

The Apiary Inspection in Colorado is handled in the same general way as is the Horticultural Inspection work. In a number of counties the newly appointed county Agriculturists have been delegated County Horticultural Inspectors, as it seemed feasible for them to do this work on their regular rounds and in connection with their other work.

The counties of LaPlata and Montezuma in southwestern Colorado have, in co-operation with the Colorado Agricultural College and the United States Department of Agriculture, employed Mr. E. D. Smith of Hesperus, Colorado as Agriculturist and he has also been placed in charge of the Horticultural and Apiary Inspection work in these counties.

I understand that the use of Agri-

GROUP OF THOSE PRESENT AT THE DELTA COUNTY FIELD MEET AT CEDAREDGE, COLO.

cultural College students, specially coached for apiary inspection work has worked well in Ohio and I firmly believe that our County Agriculturists, where they have time for the work, can with a short course of training in inspection service, render valuable assistance in the controlling and eradicating of foulbrood.

Inspection work is largely educational and the police duties of an inspector need not prove irksome to the County Agriculturists.

Crop Prospects

Bees are nearly one month late in storing honey this year. But in spite of the lateness of the season, honey is being stored in a good many localities. In the lower Arkansas valley the honey flow began about the first of July while in the northern part of the State the honey flow is at least two weeks later. Some honey came from the first crop of alfalfa in the Arkansas valley while none was secured further north and sweet clover was very late in getting into full bloom.

The crop in Colorado and the west will not be uniformly good, but conditions probably will be very variable. Good crops will be harvested in some places and poor crops in others. With favorable weather and a fast flow, northern Colorado may have a fair crop but conditions still look very unfavorable at this date, July 14th.

PART OF PICNIC GROUP AT CEDAREDGE, COLO., JUNE 10
First field meeting held by Delta County Association

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Better Than Last Year

The season this year seems to be reversed from the usual order. April gave us real summer weather, the temperature for a few days going as high as 88, while up to date (July 9th) I do not think we have had a single day so hot since that early warm spell. May and June were steadily cool and rather dry. As a result, what little clover we had was very short, and the bees lost many of their field workers during the inclement weather of fruit bloom. When clover opened, many colonies were short of workers, but had lots of brood and young bees. Naturally surplus from clover is very light here—probably averaging in the neighborhood of 20 pounds per colony. Basswood looks well, and localities that have plenty of trees may get some surplus from this source. At our north location we expect better results from clover if we could only have a bit of good weather, as up there earlier rains caused the clover to last longer than here. Soaking rains lately, at all locations, make good prospects for a crop of late honey in localities that have honey-yielding sources in August and September. While the season has been disappointing so far, it has not been nearly so bad as last year, so we have at least that much to be thankful for.

Two Queens in One Hive

On page 231, July American Bee Journal I mention having two queens in one hive for five weeks. About a week after that item was written the young queen disappeared and the old one is still on the job. I surmise from this, that the young queen had never been mated, having been reared too early in the season. A surprising feature is that the old queen is doing good work, yet even if they tried to supersede her in the early spring months. I shall watch the colony, and if queen is not superseded before fall will take the matter in hand, as she is not likely to be good another season. I have an idea that it happens oftener than we are aware of, that two queens are in the hive at once. About two weeks ago I was requeening some marked colonies, and on examining one that showed unmistakable signs of having a failing queen, a search found the old clipped queen and I dispatched her. As I saw no signs of queen cells I considered the colony safe for introducing a young queen, and accordingly gave them one at once. Yesterday I was examining all the colonies requeened to see how queens had been accepted, and the colony in question had killed the young Italian given two weeks ago. Eggs and drone larvae were in the combs and I found that like the colony at home yard with two queens, this one also had raised a virgin that had failed to get mated. Of course they killed the young Italian, for, as a rule, so long as they have anything in the hive they recognize as a queen, bees are very loath to accept another given them.

Changing Location

Someone has said that for commercial beekeeping, a beekeeper should not tie himself to any particular locality, but should have things in shape to move whole outfits easily from time to time as conditions call for. While many will not agree yet it is a fact that localities are constantly changing. For instance, when I first started beekeeping, we used to move bees in August some distance north to get buckwheat honey. Now these localities grow little buckwheat. At the Cashel apiary where I well remember going one day a few years ago, on a bicycle to see where the bees were getting buckwheat honey — the first ever noticed at that yard, today more buckwheat is sown than at any of our other locations. How long this will last I do not know, but as they grow buckwheat now as a soil cleaner, likely much will be grown for some time to come. Our home district has been one of the pioneer sections for growing alsike for seed, my grandfather being one of the first men in

Ontario to grow it extensively. With the growth of the City of Toronto, and the bulk of the farmers producing milk and other food products for the city people, alsike growing is falling off each year, and we have not nearly as good a honey location as in the past. Certainly if just starting again I would not choose our present locality to keep bees for a living, but with a home established and home ties formed, it is quite a problem for a man in middle years with a family, to pull up and form new connections. If money was everything, such moves might be in order, but I doubt the wisdom of people in conditions I have described, making such a radical move.

Requeening This Summer or Fall

Owing to very poor season last year, very little requeening was done by myself or the bees, and as a result the majority of the colonies have queens two years old. This condition no doubt applies to many places in Ontario. The safest thing to do is to try and get rid of a lot of these queens before winter or we will have a lot of superseding or queenless colonies next spring. I have done a little of this work already, but as we look for a long period of buckwheat bloom, we hope to do more of it later on. Granted that just as good queens can be reared or bought in August as in earlier months, buckwheat bloom is the very best time to requeen colonies. Not the risk that there is in dequeening a colony in clover bloom, and the August queens will give the very best service next spring.

Protest Answered.—"Hang it, Jones, I've just been stung by one of your confounded bees! I demand reparation!"
"Certainly, Bilson. You just show me which bee it was and I'll punish the horrid thing severely!"—Phialdelphia Evening Ledger.

BEE-KEEPING IN DIXIE

Conducted by J. J WILDER, Cordele, Ga

Weak Colonies

We have never heard so much complaint from beekeepers about weak colonies and never have had quite so many in our own apiaries as we have had this spring. In many cases it has been puzzling to know just how to advise to build them up for the bees seemed to go backwards rather than forward at a time when they should have been in good shape.

It is noticeable, though, that this general condition prevailed where the Italian stock was in use and such was the case with us. Usually we could hasten brood rearing but this season we failed and do not know why. The bees had plenty of stores and most of the time there was some nectar and pollen coming in and the queens were laying but would not spread brood in the usual manner. Then all at once they were swarming out leaving their brood and stores and hanging about on limbs of trees near the apiaries. Sometimes there would be from 15 to 20 of these small swarms or clusters in a single apiary.

We would return them but they would come right out again and nothing we could do would make them contented.

Changing the combs around, uniting, and feeding did not give results. Clipping queens' wings or confining them to their hives by entrance guards was of no avail as they would ball their queens or unite with some other swarm already out. We called them "Suicides" and wondered what would be the result. Of course the result was a good reduction in the number of colonies and a very light harvest.

As soon as we could get to it, we went to requeening with Caucasian stock with good results.

There are thousands of colonies all over Dixie that have not altered this poor condition yet and requeening is the very best thing to resort to in order to assure good wintering and best results next season. At this season of the year if a queen is not making a good showing it is a sure sign that she is failing and to try to carry her over until next season would result in a loss.

So it is the very best time to look after this work. There is no question but that it will pay in the long run and if you are not pleased with your stock by all means try some new blood or another kind of bees.

A SOUTHERN MOUNTAINEER APIARY NEAR CHATTANOOGA, TENN.
Photograph by R. O. Dickson

Eight or Ten Frame Hive

Our leading bee supply manufacturers have brought about no little discontent among beekeepers of the South of late by boosting the ten-frame hive and not making the South an exception in favor of the eight-frame hive. This is due to the fact that they are not so familiar with the conditions here as they are with the North where the larger hive is better. So often those who have the eight-frame hive are not contented with it, since a larger size is so strongly advocated and they are led to believe the eight-frame hive is too small for best results.

The beginner believes he will be a back number in a few years and will have many regrets or make a failure if he doesn't start in with the ten-frame size. There can be no doubt that for general purposes the eight-frame size is the best for Dixie and that the ten-frame size is entirely too large ,except in very few locations where extracted honey is produced exclusively. The ten-frame size allows too much storing and hanging out room below the supers in order to obtain best results in honey production and this reason alone condemns it for our use.

The Honey Market

There seems to be regret among the beekeepers over the dullness of the honey market this season. There is a very light crop in Dixie, and it would seem that the beekeepers could find a market promptly and without much trouble for their very small output, but this does not seem to be the case and lots of honey producers don't know, even at this late date what they will do with their honey. It took but little to supply their old customers and to look up good and reliable new ones is rather a hard task, for many merchants and firms are going out of business, and are crying hard times, and will not settle their accounts with anything like promptness or satisfaction. These conditions seem to prevail in Dixie with no hope for better conditions.

Where the output is not too great, it might be best to resort to a more general development of the home or nearby market. In Dixie the average beekeeper has hitherto shamefully neglected his home market, depending solely on a far away market which is not always the best and the most satisfactory. This might be a good time to surprise yourself as to how much better satisfaction you can get by placing your honey near home. Of course the larger producer cannot do this for the greater part of his crop must go into the hands of dealers who are in position to sell large quantities.

When you find out that the wholesalers are reliable and prompt in settling, get together on a price and if they cannot take your entire crop ship them what they say they can handle on thirty and sixty days time. But in order to get their trade, you have to have the honey packed attractively for the retail trade and well repacked in cases and crates for the jobbers and wholesalers. They will not take it poorly put up, but if well prepared for the trade nearly every firm will take it and there will be no trouble in making sales and general satisfaction will be the result.

MR. GEO. ECKERT DEMONSTRATING WATER TREATMENT FOR FOULBROOD AT CEDAREDGE FIELD MEET

When Does Beekeeping Pay?

A clear insight and determination generally result in success in any line of business. But to make it a shining success it must be made a hobby and **ridden**, with the emphasis placed on the ride.

Beekeeping is a hobby in nearly everyone's hands but the great trouble is that it is not "ridden." There are not many apiaries that have the attention and consideration they should have. It is not astonishing that so few people are making money in our line of business. I believe the time is at hand when beekeepers ought to awaken to the fact that they are not doing their best and that on account of this there are not more money makers in our ranks.

I visited a beekeeper once, who had only one apiary of about 90 colonies, but around each hive was a well trodden path, and he was there at work just as if he was rushed. As it was at a slack time in the general apiary work I asked, "What do you do here so much?" and his reply was simply "Riding my hobby daily."

Some time after this I met a traveling man who was representing some manufacturing concern and working on commission and he told me that he had been a beekeeper for more than 20 years but he had not been contented and had moved about considerably and had finally gotten into a very poor location and had to sell his bees and quit beekeeping. He was not contented with his present job and was going back into beekeeping again as soon as he could. I asked him where it was he previously "stuck." It developed that he had sold out to the energetic beekeeper mentioned above.

A few years later I again had occasion to spend a few hours with this energetic beekeeper. At this time, instead of 90 colonies in this yard there were 200, and instead of the crude honey-house, there was erected one of the most modern honey-houses, and two out-yards of 150 colonies each had been established besides.

He also had a good bank account and I learned that all the improvements and increase he had made were with the start of 90 colonies.

NOTES FROM ABROAD

By C. P Dadant. (*Concluded.*)

Paris is the universal city, the city that every traveler in Europe visits, in which there is so much of art to be seen. We were there ten days in July; we remained nine days longer in October. With the bewitching daughters of our friend and correspondent in Paris, Mr. Gariel, we visited the Louvre, the opera, etc. To enjoy Paris fully, nothing equals the company of charm-ing Parisian ladies.

Although our visits to the apiaries of Europe were at an end, we still had occasion to meet beekeepers. Mr. Etienne Giraud. of Le Landreau, who, with his father, wrote a small book describing the Doolittle queen-rearing method, and who made a great success of the artificial cell-cup system as far back as the year 1899, did us the honor to come to Paris, purposely to meet us. We spent a couple of days together and visited several persons of note in the bee world.

We made a visit to the Pasteur Institute, the greatest bacteriological station in the world. The reader will remember that we had been invited to come there, by Dr. Melikoff, whom we met at the Bertrand home, in Switzerland. He had begun studies of foulbrood, but having no fresh samples from which to work, his experiments were hampered.

The cultures shown to me under the microscope resembled exactly those of Barbo, made in the seventies. They had not yet isolated the bacilli. The Pasteur Institute has such a variety of subjects on its hands that the study of bee diseases can only be a side issue. Their original work was the study and inoculation of hydrophobia; from that they have branched to most of the diseases of the human race and of the domestic animals. We cannot expect from them as much attention to bee diseases as our own government is giving to this branch of agriculture. Our Dr. White, who has so clearly demonstrated the differences existing between the two foulbroods, American and European, will probably remain the head scientist on bee diseases, for years to come.

We called upon Mr. Alin Caillas, the honey analyst who is now serving his country as lieutenant. His father, who was still living at the time of our visit, was secretary of the International Congress of beekeepers in 1900.

We called upon Mr. Bondonneau, the former editor of "L'Apiculture Nouvelle," and were also invited for an evening by its present editor, Mr. Condamin. By the way, this magazine has suspended its publication since July, 1914; its publisher is an officer at the front, in the terrible war now raging.

We had the great pleasure of meeting the Foloppe brothers, two young men, whose interesting studies of combs built on different weights of foundation were published in the American Bee Journal in May and June, 1911. By coloring a lot of beeswax and afterwards making it into comb foundation they ascertained that when the bees manipulate the foundation they carry a part of the wax outward, using new wax as needed, so that the coloring matter contained in the foundation was carried out even to the cappings. They also experimented upon large worker cells, about which so much was said in the European bee journals some years ago. It has been held that by making foundation with larger cells—764 cells instead of 838 to the square decimeter, larger bees could be secured.

This assertion, made by the irate Abbé Pincot, in "L'Apiculteur," has not been sustained, and the general consensus of opinion, as well as the conclusion of the Foloppe brothers, is that it is best to follow nature as closely as possible.

Before leaving the field of European bee culture, I should not fail to mention also meeting, at the office of Mr. Condamin, the former president of the Algerian Beekeepers' Association, the enthusiastic Mr. Bernard. This gentleman, whose occupation is that of an inspector on the Algerian national railroads, was an acquaintance of long standing, although I had never met him. He is a fervent admirer of the American methods of beekeeping and has done a great deal of pioneer work in the uncultured villages of the Arabs of North Africa. Needless to say that our meeting was pleasant.

My reader, by this time, must wonder whether there was no unpleasant feature to our visits, whether we found everything agreeable and cheerful everywhere. I believe I have mentioned everything that happened. I recall only one instance when I had occasion to mistrust a brother beekeeper during the entire four months. It was when I received a letter from a beekeeper on the Spanish border, in southern France, offering me "an important apiarian transaction" to the amount of 100,000 francs, or $20,000. The party in question had read of my travels and thought to lure me with the possible sale of 500 colonies of bees to be shipped by me from America to a friend of his. I was to come and see him and make the arrangements for this sale. A transaction of this kind looked very suspicious to me, and instead of getting warmed up and losing my head over the prospect of making a profit that would more than cover my expenses for the European trip, I wrote to one of the most active dealers in bee supplies in Europe, enquiring whether he knew anything about this party. The reply was overwhelming. The same parties had made purchases from him to the amount of several hundred dollars which had never been paid. Difficult as it may have been, they had managed to keep out of the claws of justice. So he did not appear to have any recourse for his losses. He called them "a black gang."

So you see, dear readers, that the swindlers are not all in America, there are some on the other side of the ocean, who perhaps will read these lines and see their picture in them just as clearly as in a photograph. Luckily they are scarce.

And now, that we have left the shores of Europe, at the end of this long trip, and look back, we can hear the roar of cannon, see the smoke of burning homes, watch the endless string of homeless widows and orphans, all this within a year. Unsuspicious Belgium is a ruin, owing to too much confidence in the honesty of neighbors. Dozens of our friends have seen their sons depart, never to return. Pretty, delightful Grandpré, described, with photos, in our Journal of January, 1914, is a ruin, and my wife's cousins have been driven away from their birthplace. Even peace-loving Switzerland has had to arm and watch the frontier at great expense. Every one of those nations is a vast hospital. Glory! did you say? No, Shame, Shame upon you emperors who attempt to make for yourselves a name, written in oceans of blood! Hail Columbia! Happy land where no conqueror can dictate to the nation what course it shall pursue!

Let us hope that war in the end will conquer militarism and establish a PEACE era, with universal disarmament!

CONTRIBUTED ARTICLES~

Bee Hunting—Saving the Bees

BY L. B. SMITH.

I HAVE seen some discussions in the journals and several farm papers about hunting wild bees, cutting the trees, saving the bees, etc. I believe the writers, with the exception of Elias Fox, of Union Center, Wis. (see Gleanings in Bee Culture for Jan. 1, 1915, page 32), agree that such work is not profitable. As I have had perhaps as much experience along that line as any living man of my age, I should like to count trees with the veteran bee hunter, Mr. Fox. I have found as many as 30 and 40 bee-trees in a single season. I do not hunt them for profit, but for pastime, as a sportsman would hunt wild game, for after the tree is found, bees captured, etc., we consider the "fun" over, for in many cases we give the bees and contents of the tree to the owner of the land or some nearby neighbor, after hiving the bees for them. Like our brother bee-hunter, Mr. Fox, we always save the bees when possible.

We have often walked and carried the bees 4 and 5 miles on our shoulders in the mountains or other inaccessible places to horse and buggy. We always save all the brood and straight worker comb, and believe it pays us to do so. We have many hundreds of nice worker combs in our bee-yards, some of which have been in constant use for over 26 years, that were taken from bee-trees, and we still add to them each season.

My two sons and I own upwards of 500 colonies of bees, and more than two-thirds of these have been taken from bee-trees, caves, etc., in the woods. We do most of our bee hunting in late fall and winter. We select this time because we have more leisure and the bees are more easily "baited" when there is nothing in the fields and pastures for them to gather. We cut the tree and hive the bees at any season of the year, preferring a warm day in the winter months, as they have little or no brood then, and we can take our time transferring the combs into frames.

We use a light box (often a paper box) for "hiving." After we have the bees in the box it is then slipped into a large grain sack and tied. The combs are sorted into three grades; all the "eatable" honey into one; the small scraps of empty comb and drone comb go into the wax press; such comb as is suitable to transfer makes up the third class. All are then loaded into the wagon or buggy and taken home or to the nearest out-apiary, the bees placed on drawn combs with sufficient honey in them to last until they can be self-supporting. We have frequently had such colonies gather from 150 to 200 pounds of surplus extracted honey the following season.

AN APIARY OF L. B. SMITH IN TEXAS

Of course, we work to keep down swarming, and try to have all colonies strong, and give them every attention that any up-to-date apiarist would give. We took over 30 tons of honey in 1913, and over 40 tons in 1914, and are going to try to beat that in 1915.

We owe much of our success in apiculture to the American Bee Journal, of which I have been a constant reader for over 30 years.

Llano, Tex.

A Perfect Food

BY L. E. KERR.

A FEW years ago the people asked for and obtained pure food laws. Now that we have them, the remaining question is to decide which articles are most suited as ordinary necessaries. Fortunately, research is gathering much headway, not by financially interested concerns, but by those determined, for their own good, to get to facts. In these agitations lies a promise, to honey producers, of illimitable good,

It is a live issue, and the dailies, magazines, agricultural and trade periodicals, that are carrying the work forward, are deserving of the highest praise.

The more honey and natural foods,

L. B. SMITH IN HIS APIARY AT LLANO, TEX.—These bees were caught in the woods at various times such as fruit, nuts and vegetables, are investigated by the thinking public, the better for all concerned. Prepared victuals are generally the equal of those mother earth provides only in keeping qualities, and rarely in nutrition or wholesomeness.

It is a demonstrated fact that, while manufactured sugars in digesting deplete the system of lime, bringing as a least penalty interrupted growth and prematurely decayed teeth and probably such dreaded afflictions as tuberculosis, honey and fruit sugars, on the other hand, are a certain relief.

Yet honey is not a medicine any more than a ripe apple. It prevents rather than cures disease, as any other wholesome, natural food will. It can cure only by providing the system with vital force wherewith to successfully combat deadly elements. Few medicines do this, but only stimulate acquired energy. Honey is not stimulating, but soothing.

Originally we were given through the heated season such light foods as vegetables and fruit. For winter the richer, more sustaining nuts and grains, or protein. Honey, an original sweet in sealed waxen cells, is intended for use at all seasons.

In food matters, there is no truer science than actual test, and the writer begs to go on record as solemnly asserting that never was health and strength more perfect than when eating regularly and generously the product of the hive. Were we to accept as fact the consensus of opinion regarding it, the conclusion might be that honey is more of a luxury than a staple commodity. Excepting those who have studied its nutritive qualities, few would concede that a pound of it will produce more energy than a pound of butter, a dozen eggs, or a peck of potatoes.

This is not at all strange considering that honey has been neglected compared to artificial foodstuff. Honey never was intended to replace such foods as the potato; in contrast, though, it is of infinitely richer quality.

As a Providential and ideally perfect food I accept as choicest the unalloyed nectar of flowers in comb or liquid. Ill-health is the penalty for violated laws of nature. Perfect health will have the right-of-way when we have learned to live rightly.

Ft. Smith, Ark.

L. B. SMITH "LINING" WILD BEES ON HONEY CANYON AT LLANO, TEX.

Securing Bee Disease Legislation

BY GEORGE W. YORK.

EXPERIENCE is a great teacher. I had some of the "real thing" the past winter while a member of the Idaho State Legislature. It was my privilege to introduce in the House of Representatives the bill providing for the control and eradication of foulbrood in the apiaries of Idaho, and also to prevent the importation or exportation of the disease. It was a stringent law, and had it been approved and signed by the Governor it would doubtless have proven one of the very best laws in the interest of successful beekeeping in the United States. But the Governor vetoed the bill, and so all the work that was put upon it in both the House and the Senate, and also by the beekeepers themselves, was wasted.

I introduced it in the House, as before stated. It was referred, by the Speaker, to the committee on Agriculture and Horticulture, and by this committee was "referred back to the House with the recommendation that it do pass." It then took its regular course upon the daily calendar.

In the meantime, local beekeepers, and some from a distance, interviewed many members of the House, and urged them to support the bill when it came up for final passage, both by speaking in its favor and by casting their votes for it. This is very important work, for the large majority of the members know little or nothing about beekeeping, and particularly as to the danger of foulbrood if allowed to go unchecked.

In due time the bill came up for its third reading and final passage, and went through the House with a good majority. The most of those who voted against it did so through ignorance or by reason of a mistaken notion of economy. What better or wiser economy could there be than to protect and encourage beekeeping in Idaho by the passage of a law that would help save the bees to the State, and thus not only produce more honey, but also have their great aid in the more general and perfect fertilization of fruit and other blossoms, insuring larger crops of fruit and other products?

The bill met the strongest opposition in the Senate, where there were less members who understood the real needs of agriculture, and especially the importance of beekeeping. One senator in particular tried to amend the bill so that its "father" would not recognize his "child." I was very kindly granted the privilege of the floor, and protested as best I could against certain amendments that were proposed, which, if adopted, would have so weakened the bill as to make it useless.

To make a long story short, the Senate finally passed the bill, as amended and then, of course, it had to go back to the House for the latter's concurrence in the amendments as proposed and approved by the Senate. The

House promptly concurred, and so the bill was then "up to the Governor." where it met its unfortunate fate.

Although I had given long distance help in the passage of various State bee disease bills, when I was editor of the American Bee Journal, this time I had a chance to see "from the inside" just how hard it is to secure the passage of certain kinds of really necessary legislation. After having had this inside experience, perhaps I can give a few suggestions that may be an aid in other States where they are still endeavoring to secure bee-disease laws.

First, be very sure your proposed bill is technically and legally drawn before having it introduced in the legislature.

Second, have as many beekeepers as possible interview personally every member of the legislature. Where such interviews are not possible, get just as many beekeepers and others to write to their representatives and senators, urging them to support the bill when it comes up for passage.

There is nothing like "letters from home" to induce a member of the legislature to do his duty. And this would apply on any and all kinds of legislation besides beekeepers' bills. If possible, give, in your letters, a number of good reasons why the bill or bills under consideration should become laws. It was my privilege to use such letters a number of times, when certain bills came up for discussion. In fact, one of the Boise newspapers referred to me as the "member from Bonner county who drew on his letter file for arguments." And that particular letter file contained some mighty effective arguments, too, for they came from people (my constituents) who knew

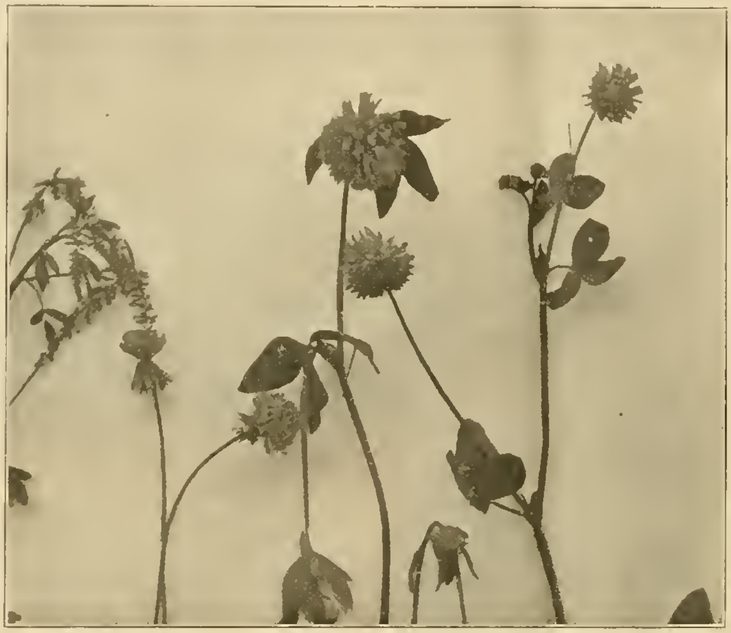


FIG. 36.—DIFFERENT TYPES OF CLOVER BLOSSOMS

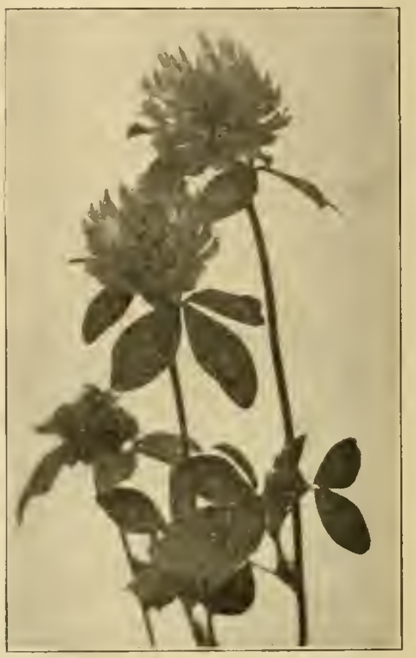


FIG. 37—BLOSSOMS OF RED CLOVER

CLOVER BLOSSOM TIME—THREE KINDS OF CLOVER BLOOMING TOGETHER what they were writing about.

After a bill has passed both branches of the legislature, then "fire in" your letters and interviews to the Governor, if you have reason to think that he might veto the bill or bills. In the instance referred to in this article, I may say that the Governor was seen and was argued with, but to no purpose. He was determined to veto the beekeepers' bill, and did so. He claimed he did it in the interest of economy, but it surely was poor economy, and he will doubtless see his error when it is too late to repair the damage done. He was sincere in his action, but he was sincerely wrong, in this case, at least.

Those interested in the success and progress of things agricultural should see to it that more men (or women) are sent to the State legislatures who really know something about the needs of those who till the soil, and who make their living through rural industries. One or two good lawyers are quite enough in any session of any State legislature. More practical business men and successful farmers are needed there, and less of those who are theorists, or who have never known what it is to labor with their hands, or to make a living from the land.

Experience is a great teacher. One gets a lot of most valuable ideas even in one session of a State legislature. I did.

Sandpoint, Idaho.

No. 8.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(Photographs by the author.)

We come now to that splendid family of plants to which our most staple honey producers belong; the clovers. This is one of the most valuable families of plants for it furnishes our best forage crops as well as our largest crops of honey. The clovers, alfalfas and sweet clovers are all closely related, and without them, there are few localities where honey production would be profitable. They are so well known as hardly to need description, yet a series of this kind would not be complete without them.

RED CLOVER.

The red clover, trifolium pratense, is a widely grown forage plant which came originally from Europe. It secretes large quantities of nectar, which is usually beyond the reach of the honey bee. There is a difference of opinion as to whether the honey bees really get nectar from red clover. While they work on it freely at times, some venture the opinion that they get only pollen. The opinion has been advanced that in dry seasons, the corollas are shorter, thus enabling the bees to reach the nectar. Dr. L. H. Pammel of the Iowa College of Agriculture, at Ames, has measured a large number of these tubes in an effort to ascertain the facts. As yet he still very much doubts the possibility of the difference in length being sufficient for this purpose. Dr. Pammel will appreciate samples of clover from fields, and, especially, the identical plants on which bees are seen to work, for further test.

So many reports of crops of honey from red clover in dry seasons are heard, that the writer can hardly question the fact that bees do sometimes get honey from red clover. It is well known that the honey bee often reaches the nectar of other plants through the perforations of the corollas made by other insects, and there is a possibility of such a condition with red clover. The insect causing the perforation would necessarily be very abundant, to perforate a sufficient number of blossoms to enable the bees to store surplus from this source. Dr. Pammel proposes to investigate the matter fully and his conclusions are awaited with interest.

ALSIKE CLOVER.

Alsike or Swedish clover, trifolium hybridum, is also native to Europe. but is very generally grown in the northern states and Canada. The blossom resembles white clover but is somewhat larger and has more color, many of the blossoms being rather pink. Instead of a single blossom at the top of a flower stalk, as in white clover, several blossoms occur on a single stem in a manner somewhat similar to red clover. Fig. 38 shows the blossom and leaf of alsike. This plant probably yields as regularly as any honey-producing plant and the beekeeper who is near a large acreage of alsike is fortunate indeed. Where alsike is mixed with red clover in meadows, the yield of hay is considerably larger than is produced by either alone. The seeds are so much smaller than red clover seed, that it is generally considered that a peck of alsike seed will produce as many plants as a half bushel of red clover seed. Where the usual timothy and clover mixture is grown for meadows, this is about the proportion of seed to use to get an equal stand of the two kinds of clover.

WHITE OR DUTCH CLOVER.

White clover, trifolium repens, like alsike, is perennial and, once established, will persist for many years unless killed by severe drouth or other unfavorable condition. The creeping habit of the plant prevents its being grown for hay, although it is a very desirable pasture plant. The stems lying flat on the ground take root at the nodes or joints, thus making a solid mat. The blossoms appear at the top of stalks which may be from three to twelve inches tall depending upon the soil, moisture, etc. Fig. 39 shows the blossoms of white clover at different stages. This plant is more generally depended upon for surplus, than any other single source, although sweet clover is rapidly crowding to the front. What alfalfa is to the irrigated regions, white clover is to the beekeepers of the humid sections. White clover honey is light in color, with a heavy body and the finest flavor. It is generally considered the finest honey that goes to market in quantity and always brings the highest price.

There are several other varieties of clover grown to some extent and some wild species. Crimson clover is grown in some parts of the south. but is not hardy in the north. In general, all the clovers may be said to be good

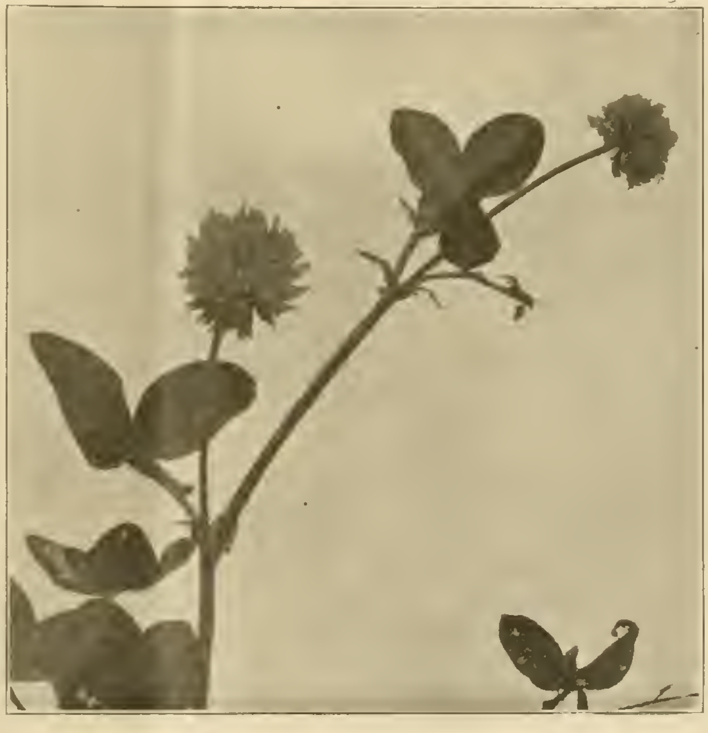


FIG. 38.—ALSIKE CLOVER

honey plants, although the bees are not always able to reach the nectar.

SWEET CLOVER.

There are several species of sweet clover native to Europe and Asia, a few of which have been introduced into this country. The white sweet clover, melilotus alba, and yellow sweet clover, melilotus officinalis, are the two most generally grown in this country. The value of sweet clover to the beekeeper has long been known, but it is only recently that its value as a forage crop has been appreciated. In a few localities it has come to be quite generally grown for hay and pasture, and, wherever it has an opportunity to demonstrate its value, it remains permanently, the acreage constantly increasing. Along the irrigating ditches of the west it has become well established, so that it is an important source of nectar in Colorado and other western states. It has long been known as a roadside weed in nearly all parts of North America, and is to be seen along the railroads for miles in many places. The extension of its growth as a forage plant will greatly increase the crops of honey in localities where it becomes popular, and as it is one of the surest plants to yield nectar, the man within reach of it will seldom face a failure.

ALFALFA.

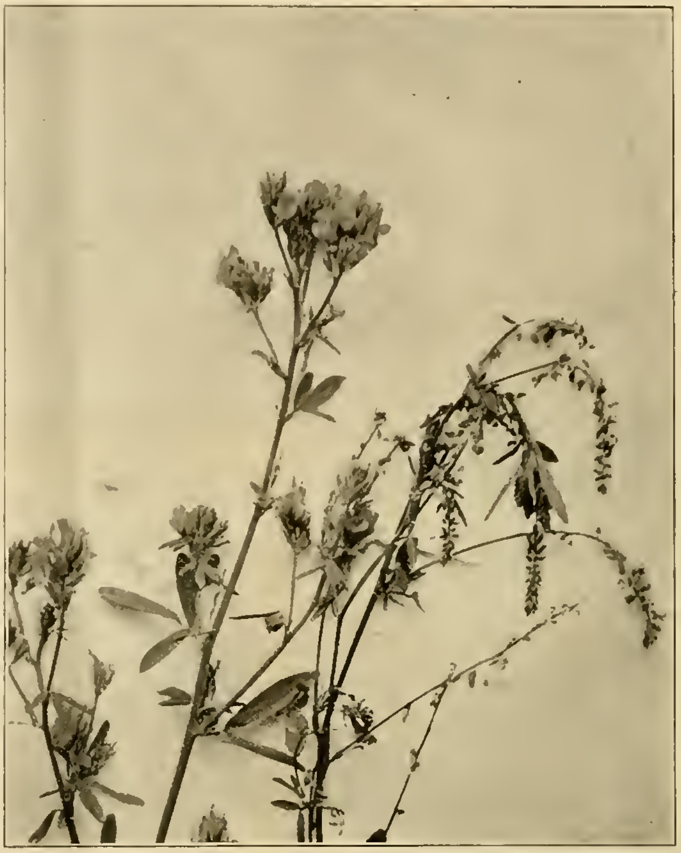


FIG. 40.—BLOSSOMS OF ALFALFA AND YELLOW SWEET CLOVER

Alfalfa or lucern, medicago sativa, like most of this family of plants was introduced from Europe. It has been grown in the irrigated sections of the west for many years, but of late is being introduced into the humid sections from Iowa to the Atlantic coast. The plant grows vigorously, and produces large quantities of splendid hay. In the arid regions of the west it produces large quantities of honey, although it seldom yields in the humid sections. The writer has not found the bees working on it freely in Iowa oftener than about one year in five, and then only for a short time during a severe drouth when conditions approached the usual conditions in the arid climates.

Prof. N. E. Hansen of South Dakota has recently introduced some new alfalfas from Siberia that thrive with a small amount of moisture, and it is hoped that these new varieties will thrive on the dry uplands of the west where irrigation is not possible. If they come up to expectations they bid fair to do wonders for the dry land farmers of the west.

Alfalfa honey is of a high quality, and is produced in large quantities by the beekeepers in all irrigated regions.

Atlantic, Iowa.

Copyright: 1915, by Frank C. Pellett.

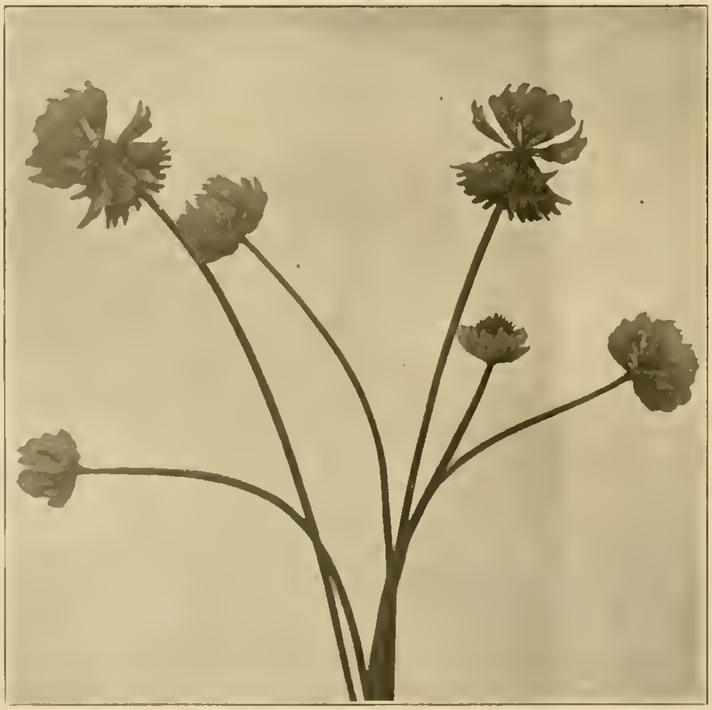


FIG. 39.—WHITE CLOVER BLOSSOMS IN DIFFERENT STAGES

Swarming Devices

BY J. E. HAND.

FOR obvious reasons swarming is a calamity to be avoided if possible, hence any invention that savors of improvement in present methods of swarm control should be welcomed by progressive beekeepers. In the June number of the American Bee Journal Dr. Bonney introduces a device which he calls a "swarm saver;" it is supposed to be an automatic self hiver of bees. If Dr. Bonney says it will work in his location I am ready to believe him; in the absence of such a statement, however, I take it that he has not tried it, in which case it remains to be proven whether or not it is an element of salvation to the swarm. There have always been two serious objections to all self hivers; first, their principles do not harmonize with the habits of bees, and second there is too much equipment for the amount of service rendered, and in my opinion the swarm saver is open to both these objections. With my limited knowledge of bee nature I would expect such a wide change in the position of the entrance to demoralize the bees for two weeks to the extent that many will join other colonies and seriously affect the honey crop. Furthermore if the queen should succeed in reaching the top story she would in all probability be deserted by the bees, for they will choose their brood and queen-cells in preference to the queen. This is abundantly demonstrated by the difficulty of getting bees out of supers with bee escapes when brood is present. If these deductions are correct the swarm saver simply cages the queen and a few drones. An Alley drone trap will do it better with much less equipment and no disturbance to the bees.

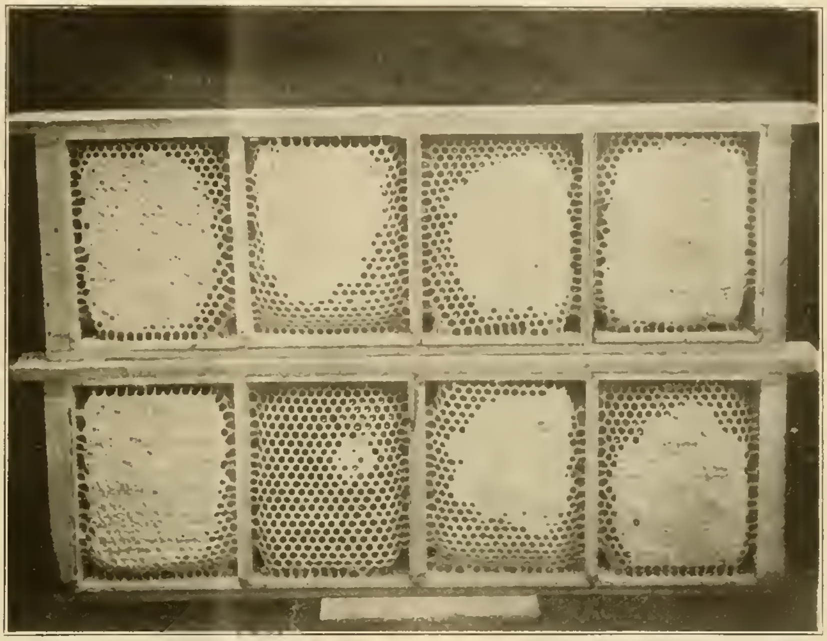
It is not my purpose to under-rate an invention of real merit, but experience along this line has taught me the folly of employing excessive and complicated equipment in the solution of a simple problem. In 1911 we were granted a patent on a simple device to control swarming by shifting the field bees into an empty hive placed close up beside the parent colony. It operated in harmony with the nature and habits of bees; they entered the new hive through their accustomed entrance when the switch was thrown, and finding their queen and a frame of brood accepted the situation and swarming was controlled by the turning of a switch, but we soon learned that extra equipment means extra expense and extra manipulation all of which increases the cost of honey production. While that invention solved the swarming problem with economy of labor, there are greater problems that it did not solve, and its doom was sealed. It was then that we resolved never to invent another method that involved excessive equipment and manipulation, for these are active factors in operative costs. An improvement is of little value unless it reduces operative costs.

Birmingham, O.

Feeding Back Extracted Honey—Feeders, How and When to Use Them

BY F. GREINER.

Not many beekeepers believe in and practice feeding back for the purpose of producing comb honey. I would not want to say that it pays always or recommend unconditionally such a practice, and still when conditions are right, weather favorable, etc., I feel that I can well afford to feed back even the very best of extracted honey. It may be that others are not situated as I am, and so do not find the practice profitable. It seems to be a fact: comb honey finds a ready market; the demand for it is not fully supplied and when I turn extracted honey into comb honey the sale is guaranteed. When I have unripe honey I can do nothing better than to feed it back if it were for no other purpose than to get it more ripened by the bees. One may thus by feeding back, even ripe honey, obtain a product of exceptionally heavy body when such should be desired for some purpose. A most favorable time for feeding back is as soon as the flow from clover ceases or begins to decrease. The colonies used for the purpose should have distinguished themselves during the season as comb honey producers and should be placed on a contracted brood-chamber. One shallow brood-chamber of the sectional hive I consider just right. If I did not use such a hive I would con-



BEST SEALED EDGE OF THE SECTIONS NEXT TO THE ENDS OF FRAMES

F. GREINER PLAN OF PLACING FEEDER IN HIVE BACK OF THE COLONY tract by dummies or otherwise.

The beekeeper, if a comb honey producer, who has not at the end of the clover flow a quantity of unfinished sections is indeed fortunate. But if he has he may have them quickly finished up if he will sort them out, place them in supers, put two or three at a time on these selected colonies and feed good honey, all the bees will take. It is so satisfactory to me, that I don't care if I have ever so many unfinished sections. I know that by feeding I can change the unsalable product into fancy honey, for under these artificial conditions I find the bees finish the sections perfectly, sealing every cell. Such combs as are only partially drawn out, or such as contain little honey I do not return to the bees at all, but allow the bees to clean them out. But all combs well drawn out and largely filled with honey, though there may not be a cell sealed, such are well suited for the purpose. When assembling the unfinished sections I always place them in the super in such a way as to have the best filled sections next to the outside, the lightest in the middle. If one face of a section is all completed, I put this face next to the outside, and when assembling the unfinished combs in my wide frames I go so far as to have the best sealed edges of the sections next to the ends of the frames as will appear in the illustration.

Open air feeding is of course out of question. We have to feed inside of the hive ordinarily. The Miller feeder is well adapted to feed on top of the hive and is thus used almost always. I have used it in a hive body back of the hive as well as in front of the hive and with satisfactory result. The plan enabled me to get at the supers easily and use the escape to free the finished supers from bees. When using the Miller feeder in this fashion a bridged passage from the hive containing the bees to the hive body containing the feeder had to be provided as shown in the illustration. Atmospheric feeders could be used in this same manner either mason jars, ten pound honey pails or even sixty pound square honey cans.

If a feeder can be arranged under the hive, i. e. in the stand, in such a way as to be easily filled, an arrangement of the kind suits me best and is the simplest. Feeders should be filled after bees cease flying, and care must be exercised that no feed is spilled and that outside bees can never get to the feeders.

Naples, N. Y.

Beekeeping at Iowa Agricultural College

BY FRANK C. PELLETT.

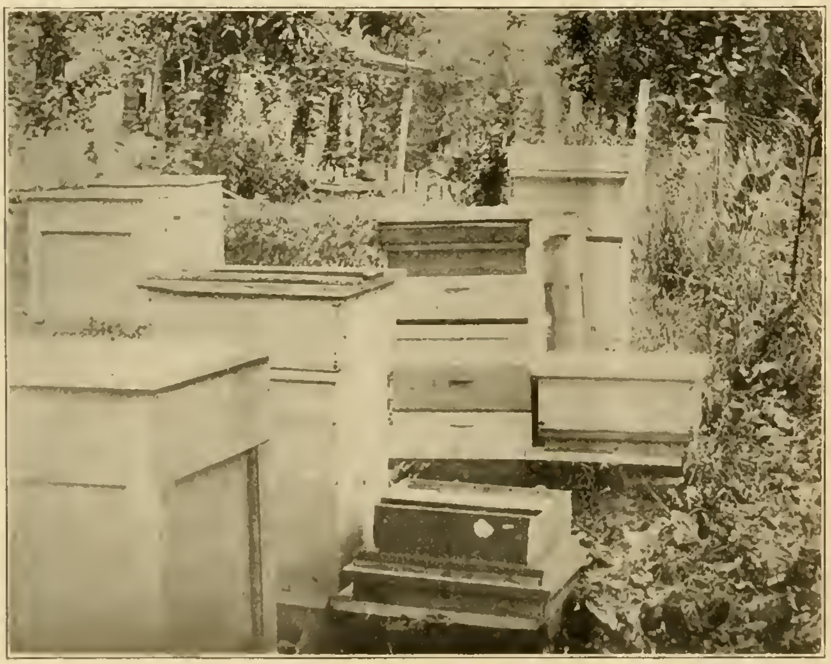
Although it is starting on a very modest scale, beekeeping is at last a part of the regular work of the Iowa Agricultural college at Ames. Although many of us were hopeful of larger facilities to begin with, the work will now go on and will be developed to meet the needs of the beekeepers of the state. The Iowa college is one of the best and no part of its work will long be permitted to lag behind that of other states.

DR L H. PAMMEL.

The beekeepers are very fortunate in the men who have charge of the work. Dr. L. H. Pammel head of the department of botany has been connected with the institution for twenty-five years. He is beginning an extended study of honey-producing plants, nectar secretion and other subjects in connection with the relation of the honey bee to plants. This work will require several years to complete. Those who know Dr. Pammel, or who have seen his monumental work on the "Weed Flora of Iowa," or his "Manual of Poisonous Plants," feel that this new work will be of far reaching value, not only to the bee men of Iowa, but probably to the beekeepers of the world at large.

DR. L. H. PAMMEL,
Professor of Botany, Iowa College of Agriculture

Dr. Pammel intends not only to make a thorough study of the honey plants of the state in order to pro-



GREINER'S FEEDERS IN BODIES BACK OF THE COLONIES

DR. L. H. PAMMEL ON THE LAWN OF HIS HOME AT AMES, IOWA vide the beekeeper with dependable information that will enable him to improve his locality, but to investigate the conditions that influence nectar secretion, the insects that compete with the honey bee in gathering the nectar, and assist the bee in plant pollenation. These are only a few of the many problems under investigation in the department of botany by Dr. Pammel and his assistants. It is estimated that at least four years will be necessary to cover the ground laid out in these investigation and Dr. Pammel is anxious to get in touch with the wide awake bee keepers of Iowa and surrounding states in order to learn of any peculiar conditions that may arise. If the beekeepers of Iowa could realize the possible value of this work, they would co-operate most heartily and send to Dr. Pammel at Ames samples of the plants on which they find bees working and make notes of the length of time they are seen to work, etc. Dr. Pammel will be at the field meet at Hamilton September 7th to get personally acquainted with the beekeepers present, and will talk on the "Place of Botany in the Beekeepers' Education" at Keokuk the following day.

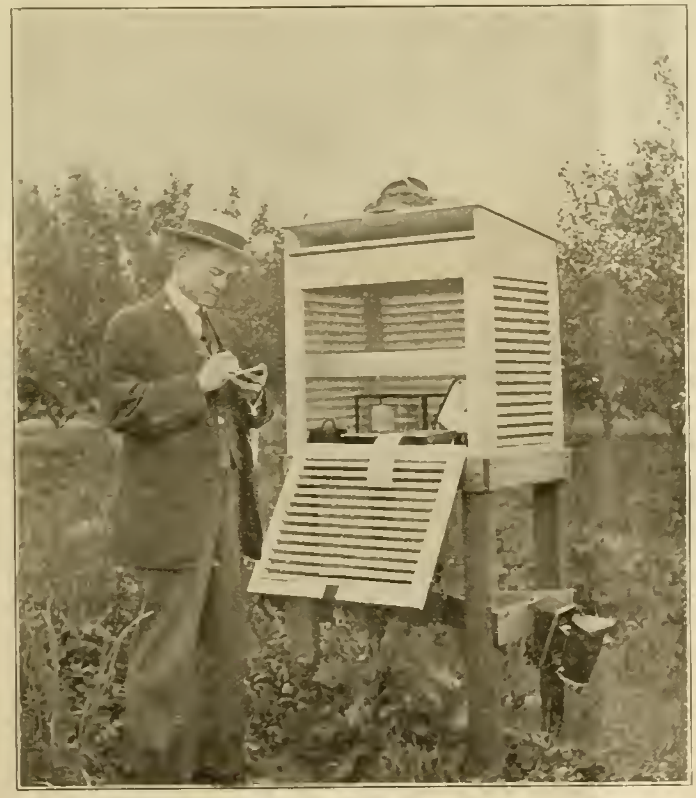
PROF. C. E. BARTHOLOMEW.

Prof. Bartholomew is no stranger to the beekeepers who attend the Iowa conventions. At the last meeting he was elected President of the association. The beekeepers have confidence in Prof. Bartholomew, both as to his ability and his loyalty to the business of beekeeping. He has been a practical beekeeper as well as a theoretical student of apiculture. A scientifically trained man with practical experience can do much for the beekeeping interests in such a position as he occupies. Prof. Bartholomew is not a boomer and is careful to advise against taking up beekeeping ill-advisedly. While he recognizes the fact that it is but a partially developed business and there is no immediate danger of crowding the field, he makes it plain to those with whom he comes in contact that the untrained and careless owner is a detriment to the industry and should be discouraged. According to his instruction the beekeeper should never own more bees than will be properly cared for. If a man has only time enough to care for one or five colonies he should never have more, and he never should have any unless they are to be given proper attention.

The influence of these men upon the students of the college who are going out to the farms of every corner of the state will be very helpful to the beekeeping interests. The student who leaves the college will feel that beekeeping is worthy of respect and that it is not to be lightly taken up with half a dozen stray swarms in nail kegs.

Prof. Bartholomew is keeping elaborate records at the experimental apiary. The daily and hourly temperature is recorded by self-recording instruments, the humidity of the atmosphere, the direction and velocity of the wind and other weather conditions are carefully noted. That weather conditions influence honey production to a great extent is well known to all practical beekeepers and it is proposed to learn why and how this influence arises. A self-recording scale will probably soon be in operation so that the gain or loss for any day can be noted not as a whole but by minutes or hours. This record together with the weather conditions will be very valuable. By means of elaborate experiments Prof. Bartholomew proposes to ascertain just how much honey is necessary to produce a pound of bees and many other things of interest and value to the honey producer. That the results of these experiments will be very valuable to the beekeeping specialist is apparent to all. Prof. Bartholomew will also be at Hamilton and Keokuk and will have something interesting to tell those in attendance.

Atlantic, Iowa.



PROF. BARTHOLOMEW MAKING HIS DAILY WEATHER RECORDS AT THE EXPERIMENTAL APIARY

Shipping Bees to British Columbia

BY F. DUNDAS TODD,

(Foulbrood Inspector)

According to the terms of one of the clauses of our foul brood act all bees imported into British Columbia are quarantined for 9 months at the point of entry. The transportation companies, to protect themselves from a lot of trouble, refuse to accept bees for delivery in British Columbia, so shippers in the United States and Eastern Canada will find it wise to turn down all orders from this province.

Queens in cages are at present admitted, but every beekeeper has been advised to buy only from breeders who can show a clean bill of health from an inspector.

Today British Columbia has fully one thousand beekeepers, mostly beginners on a small scale, but as the inspectors become acquainted with its immense territory they begin to believe that the province will at no distant date march into the front rank as a honey producer. Our government is guiding the efforts of every one in the industry and our progress is very rapid. We cut down our importations of honey last year by 58% and trebled our home production.

Our primeval forests are literally full of honey bees in the settled districts, so there is no excuse for anybody wanting to import from other regions.

The inspectors' job is to keep this huge area free of foul brood. We have had four attacks in five years, all traceable to imported bees. I am fighting the last and most serious. It originated in the city of Vancouver from imported queens, and was carried to a couple of other points by unlucky purchasers. Last fall I found

American foul brood in 20 apiaries, affecting 45 colonies, all of which were burned.

We make no pretence of curing the disease in British Columbia; one diseased cell condemns the hive to the flames. Now that I am in the fight I endeavor to trace the spread of the contagion as all information is valuable. Here is one point I discovered. In one apiary of five colonies I found one affected. The nearest diseased colony, a strong one, was fully two miles away. The affected colony was also very strong, having been a very large first swarm. After some close questioning I found that the hive body had been bought from an infected apiary, where it had been in use for a weak swarm just three weeks. The frames were new with full sheets of foundation. Advocates of the "shake" system of cure will kindly take notice. As I see it the essence of this plan is a pure gamble. You despoil the bees of all their combs, stores and brood ,and chance that about 99% of the germs are in the plunder; then you hope that the germs on the bees and hive will never get an opportunity to enter the anatomy of a bee baby. We in British Columbia are just as anxious to wind up the career of the hundredth germ as the other ninety and nine. One of our inspectors in one apiary found that the spores must have lain dormant three years before their opportunity arrived, for the hive, brought from an infected region in Oregon, had been in British Columbia that length of time before foul brood developed.

Victoria, B. C., Canada, March 11.

(The "shake" system, when thoroughly applied, has been so successful that we cannot help recommending it, but it is well to disinfect the hives.—Editor.)

A Good Bottom Board

BY ED SWENSON.

THERE has been so much talk on different bottom-boards and feeders combined, that I will describe the one I like best.

It is made 4 inches deep, with the back nailed solid, but the front piece is hinged so it may be let down and used as an alighting-board (1). This piece has two hive hooks which fasten on to the side pieces to hold it in place when raised (2).

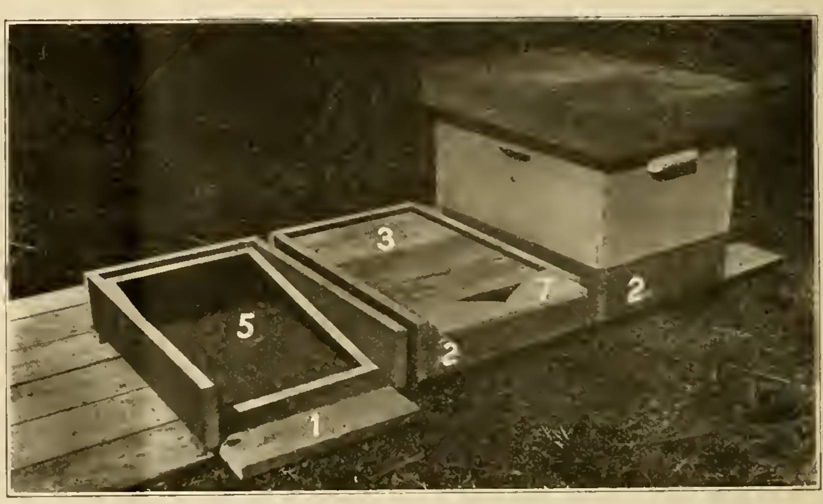
A board of ⅜ inch material (3) slides in or out, and may be raised or lowered as occasion requires in fall, winter and spring. In the winter it is lowered (4) so as to give a deep clustering space under the frames (which seems to be their choice when conditions permit). It is also impossible for the entrance to become clogged with dead bees as it is over 3 inches above the bottom. In the spring this board is again raised so as to make less room for the bees to keep warm. When warm weather sets in, this board is slipped out and a screen frame put in its place.

There are 2-inch pieces nailed on the underside of the frame, which hold it together, and they also raise it up from the bottom, so the air comes through from the underside and circulates through the hive when the screen is in. The rim of the screen has two headless lath nails partly driven in on each side which slide in saw kerfs cut into the side pieces for that purpose. The front part of the screen may be lowered (5) so as to form an incline. If the bees are likely to build combs below the frames, the screen may be raised so that there will be only a bee-space between it and the frames, and it will still serve its purpose as a ventilator. It may be lowered so as to give a 3-inch space below for moving to and from out-apiaries or in summer as extra means for ventilation, to help prevent swarming (6).

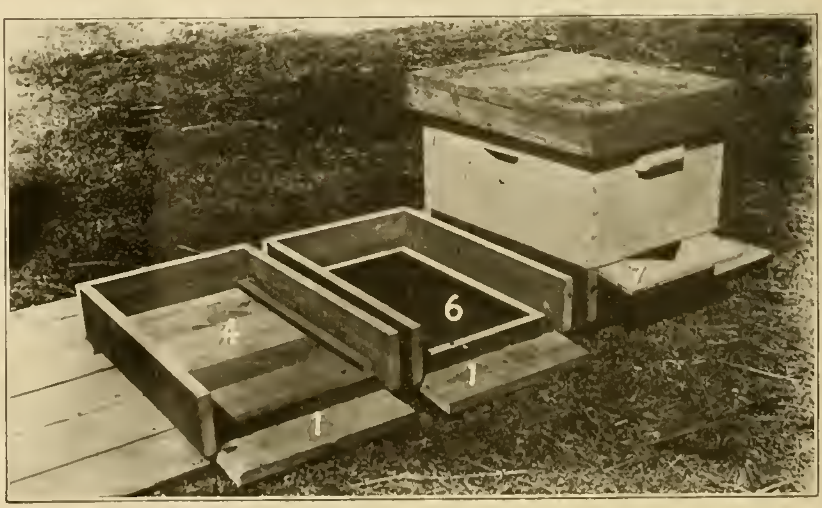
The entrance block is a 4-inch piece (7) ⅜-inch thick with a V notch cut into it and a piece of screen attached on one side. This also serves as an alighting-board and is slipped in or out to regulate the size of the entrance. By shoving it far enough the entrance may be entirely closed.

The bottom-board may be used as a feeder by simply inserting a dripping pan with a float in it. But I like the friction-top honey pail of J. L. Byer better.

Spring Valley, Minn.



ED SWENSON'S BOTTOM BOARD



ANOTHER VIEW OF SWENSON'S IDEA OF A GOOD BOTTOM BOARD

An Analysis of Dark Gray Honey

Does Soot in the Air Get Into Nectar and Discolor the Honey?

BY J. A. HEBERLE, B. S.

Based on a report of Dr. J. Drost, in the Bienen Zeitung

A SAMPLE of basswood honey from Mr. H. Ninebuck, of Hamburg, was sent for an analysis to Dr. J. Drost, that was remarkable for its dark color (mouse gray). Mr. Ninebuck contends that the off color is from soot. Those not agreeing with him say that during the short time flowers secrete nectar but very little soot could find its way into the nectar; besides, a good many flowers and blossoms are bending over or hanging. etc., thus practically preventing soot from settling in the nectar. Dr. Drost says the air in Hamburg, and its immediate vicinity, is charged with more soot than elsewhere, and consequently more soot can get into flowers and blossoms where the form does not preclude this than at other places; yet the quantity of soot that may thus get into nectar and honey must be so minute that it could not cause such a dark color as the sample showed.

The beekeeper who furnished the sample stated that the yellow blossoms of basswood when falling were still filled with nectar, and that he has seen the bees scrambling on the streets sucking this nectar. Dr. Drost holds that honey from such blossoms is at best an exception, and while such honey probably would contain a little more soot and dust than from fresh blossoms, the quantity of honey from such fallen blossoms compared with entire crop would be so insignificant that it could not seriously be considered as causing a discoloration.

Result of the examination and analysis.

Appearance, dark gray; consistency, crystallized.

Odor, very aromatic.

Taste, differed considerably from basswood honey; very spicy.

Water, 15.88 percent.

Dry matter, 84.12 percent.

Invert sugar, 77.90 percent.

Cane sugar, 1.09 percent.

Sugar free extract, 5.13 percent.

Polarization before inversion, 1.70 percent.

Polarization after inversion, 1.92 percent.

Fiehe's test for artificial honey gave no reaction.

Ley's test, greenish brown; this is not unusual.

Lund's test, 1.0 cm. precipitate.

Alcohol gave a small but distinct precipitate.

Fiehe's test for starch sugar, none.

Mineral matter, 0.52 percent.

Sand, just a trace.

Chlorine, 0.05 percent.

Soot, decided trace.

Pollen, the characteristic pollen of basswood was present nearly the same amount of a small, round, decidedly transparent pollen, and a few other pollen grains were found.

REMARKS.

According to odor and taste this honey could not be called pure basswood honey. The greater part from the centrifugated solution was from basswood. Considering that the genuine basswood honey often shows but a small amount of pollen; in some instances its presence cannot be proven, probably because the blossoms are hanging so that but little pollen falls in the nectar, we may assume that the bulk of the honey in the sample was from basswood blossoms. The small, round, colorless pollen hardly got there by chance, there is most likely honey from the same flower mixed with the basswood honey in the sample. On account of the lack of literature this pollen could not be identified.

The chemical analysis showed a very high amount of ash, about double the amount usually found in basswood honey in this part of the country. The polarization of a 10 percent solution before inversion was below the average. The color of the solution was the same dark gray as the honey. After standing for days no change occurred in the color, nothing settled to the bottom that might have shown that soot had been mixed with the sample, not even when the solution was centrifugated.

The matter causing the dark gray color could only be separated by means of a floculent (aluminous) precipitate. The filtrate from this precipitate had a faint yellowish green appearance as by other honey. The dark gray had disappeared and did not reappear when the filtrate was evaporated to the consistency of honey. The aluminous precipitate which is itself colorless, had taken with it the dark coloring matter. After dissolving this gray precipitate with hydrochloric acid there remained on the filter a deep black shining residue which burnt readily and may be taken to be soot. If other honey is treated the same way with alum and the precipitate dissolved in hydrochloric acid, there remains no residue that has anywhere near such a deep black color.

Dr. Drost concludes from this analysis, and by comparing it with other analysis, that the soot in the sample came not from nectar of flowers alone.

The high content of ash and the comparative small deviation of polarized light, for basswood honey, point to an admixture of honey from honeydew. The amount from honeydew, however, must have been small, otherwise the polarization would have been more to the sight, and more dextrine would have been present. Aroma and taste also point to a small admixture of honeydew. Honeydew most likely comes in contact with and holds more soot and dust where these contaminate the air, than nectar from the various flowers and blossoms.

Honeydew is found around Hamburg, especially in hot, dry years on basswood, maple, and other trees and bushes to a considerable extent, and it may come in contact with more soot and dust than elsewhere. It is only soot in the finest state of division that is found in honey which probably passes the bees as it does the filter. Has discoloration not been noticed in great industrial centers, where much heavy smoke prevails?

Kempten, Bavaria, Germany.

[This article is of especial interest to me because I have already often wondered whether the peculiar muddy appearance of honeydew is not in part derived from dust. The production of the aphis honeydew is very great at times, and some of it remains spread upon the leaves of trees several days before being harvested. It dries up during the warm sunshine and becomes again moistened by the night's dew. Hence we find the bees busy upon it early in the morning. If the dust or soot thus gathered could be eliminated, perhaps the honeydew would lose a part of its repulsive appearance.—Ed]

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Laying Worker

Did you ever have any experience with laying workers in a hive where a young queen has hatched? This is my experience. On May 9 I tranferred a swarm of bees from a hive which I expected to discard on account of its odd size. On May 30 all of the brood was hatched, and on examination I found a cell already hatched, and by searching I found the young queen. Today I went through the hive to see if the queen was laying, and all of the eggs and larvæ which I found were in drone-cells, and the eggs scattered about in worker-cells. I examined closely the comb on which I found the most drone-cells, and then and there I saw a worker doing her work. What do you think of that, with a young queen in the hive and she was a beauty. I closed the hive, thinking things might right themselves if left alone, but in the afternoon I found the queen on the alighting-board dead with a ball of bees around her. I broke up the colony at once.

Would you kindly tell me what you think of this case. When I say they had a laying worker, I mean to say that I saw her lay one of her eggs in a drone-cell. INDIANA.

ANSWER.—Your experience is quite exceptional. It is not often that a laying worker is caught in the act. In all my experience I never saw it, I think, more than once. If your bees are Italians, it is remarkable that laying workers should appear when they did, although with some of the other races laying workers are inclined to put in an appearance whenever laying is not normal. You speak a little as if there were only one laying worker present. The probability is that there was quite a large number.

Extracted or Comb Honey?—Royal Jelly

1 I have a few hives of bees and wish to increase, but am undecided as to which to do, buy fixtures for section or extracted honey, and if section whether plain or beeway? It may save me quite an expense later on.

2. How long will royal jelly, taken from a queen-cell, keep and still be fit to use in grafting cells? OHIO.

ANSWERS.—1. Whether it is better to produce comb or extracted honey depends upon the honey and the market. The darker honeys do not sell so well in sections, and in some places consumers prefer sections so strongly that even dark honey pays better in sections. From what I know of your location, I think you have light honey, but your market for extracted honey is unusually good, so that my guess would be that you will do well to extract.

2. I don't know. Much depends upon the thickness of the jelly and upon how it is kept. If very thick, in a warm place with

air stirring so as to encourage evaporation it might be unfit to use in less than an hour. Not very thick, in a cool place with little chance for evaporation, I *guess* it might keep two or three days.

Shipping Bees—Caucasian vs. Carniolan

1. I want to take a few swarms of bees with me to Minnesota about July 30. The car will likely be on the road about a week. How shall I prepare the bees for shipment?

2. What are the physical features that distinguish the Caucasian bees from the Carniolan? Illinois.

Answers.—1. The frames in your hives must be fastened so they cannot move about, although that is not necessary if you have frames with fixed distance, as you probably have. If the entrances to your hives are two inches deep, closing them with wire cloth may give all the needed ventilation. Otherwise better have the entire top covered with wire cloth by means of a frame an inch or two deep. With only a few hives, you can have each one on the floor, kept in place by cleats nailed on to the floor. If the weather is very hot, sprinkle the bees with water every day or two.

2. The main difference in appearance is that the whitish ring is not so distinct in Caucasians as in Carniolans. Carniolans look enough like common blacks to make it hard to distinguish them, and Caucasians look still more like blacks.

Is a Bee-Sting Fatal?

Does the sting of the honey-bee ever prove fatal? I have heard that if a person is stung on the end of the nose it is fatal. Is this a fact? Tennessee.

Answer.—I don't believe a sting of itself ever caused death. There have been cases where persons died after being stung. I've been stung many a time on the nose, and I'm not at all dead.

Early Queen-Cells—Spreading Brood

I looked over my bees for the first time May 5, and gave each colony clean bottom-boards. Two of the colonies seemed so forward that I at once gave them an extra full depth super, and they went to work therein. No. 30 and 33 continued showing vigor. On the 10th I was surprised in finding a queen-cell in the lower body of No. 33, about two days beyond the egg stage; there were also in the upper body eggs in three or four little globular cells. No. 30 had one such globular cell with an egg. No other colony, so far as observed, showed any sign of swarming, both these colonies had quite a number of worker eggs and comb—place for more eggs. The upper chamber contained only four or five frames, some only with foundation. Last year's frames with foundation were drawn out at once this year; only one frame has some drawn, and that to but one-third of its extent.

My colony, No. 28, had nearly six frames filled with eggs and brood, the other four were full of old honey. I put on a super the 14th, and into the same I put the four frames of honey, and in place of the latter below I put four frames of empty comb. By the 19th, nothing was done in these combs, so I put them at the opposite side of the hive-body from where they were.

A good colony, in five days, not having done anything as stated, might be an indication of the state of this season, and in judging upon Nos. 30 and 33, it might be of help. It has been mostly cool, cloudy and windy here, and especially so during apple bloom, which now is over.

On May 11, I spread brood in three colonies, but feared afterwards I had done wrong; however, a few days after I examined the colonies, and could not see that any harm had been done. There was not any chilled brood, and half of the transferred frames had eggs in them. Pennsylvania.

Answer.—According to what you say, queen-cells must have been started in No. 33 May 14. That is probably quite exceptional in your locality, but it is not certain that swarming will result. A cold spell may induce the bees to empty out those cells. May 24, I was surprised to find that the queen had stopped laying in some of my colonies. The weather had been hot in April, but cold in May.

You spread brood, and a few days later could discover no harm done. Be thankful; next time you may not get off so well. It is, however, just possible that harm was done without your discovering it.

Age of a Queen

Is there any way to tell the age of a queen, also how old should a queen be allowed to get. We will have a good flow of nectar here in Wisconsin if we get a little dry weather so that the bees get a chance to work. Wisconsin.

Answer.—There is no certain way to tell by the looks of a queen how old she is. After you have some experience you will be able to make a fair guess as to whether a queen is old or young, as an old queen is more inclined to have a shiny look because her plumage is worn away. Sometimes, however, a young queen has the same look. An old queen is not likely to move about on the combs in as lively a manner as a young one.

There are different views as to how old a queen should be allowed to become. Some think not more than two years. In my own practice I allow her to live as long as she will, for when she gets too old the bees will supersede her without any interference on my part. Of course, if she is unsatisfactory in any way, I get rid of her as soon as I can.

Swarming

I purchased a colony of Italian bees in a box-hive in the fall of 1914. I wintered them successfully, and the colony was strong in the spring. I purchased a movable-frame hive in which to hive the expected swarm, a smoker and other necessary supplies I ordered a copy of "Langstroth on the Honey Bee," and made a careful study of it.

On June 5 the bees swarmed and clustered on a limb of an apple tree, and in ten minutes after they returned to the old hive. They swarmed again the next day, but again they returned to the hive. I was told they would swarm again, but as the weather has since been cloudy, and there has been frequent rains, they have not swarmed again. What was the cause of this behavior? Will they swarm again and cluster without returning to the parent colony? As I have a new hive fitted with foundation I would like to have bees in it. Is there any method of artificial swarming which could be practiced? As I intend to transfer the bees from the box-hive into a movable-frame hive, what method would you advise under the following conditions: The box-hive has two entrances, one on the bottom-board and one six inches higher. There are eight ½-inch holes in the top of the brood division to the surplus division. During the two weeks since the bees swarmed they have clustered in the surplus division of the box-hive. What would you do under the circumstances? Illinois.

Answer.—There may have been something wrong with the queen's wings so that she could not go with the swarm. In such case the swarm may issue again once or several times. But about a week after the first time there will be a young queen reared and she will come out with the swarm. Evidently, however, yours did not swarm at that time, for the swarm first issued June 5, and your letter is dated June 19. Likely the very bad weather discouraged them from swarming; but you may be pretty certain that a young queen has taken the place of the old one.

Yes, indeed, you can practice artificial swarming, and in your book, "Langstroth on the Honey-Bee," you will find a whole chapter devoted to it, Chapter VII.

There is nothing in the case to require anything different in transferring from the instructions given in your books.

Diseased

I have a hive of bees that won't build up. They have plenty of stores and are rearing young, but about the time the young are hatched out they seem to be sick or something, and the old bees take them out of the hive and drop them on the ground. I thought at one time they were queenless, but upon going through them I found a nice queen. I do not think it is paralysis, as it does not seem to affect the old bees at all. We have no foulbrood in this part of the world that I know of. I was thinking of killing the old queen and putting in a frame of brood and let them rear another one. Do you think that would be the thing? Mississippi.

Answer.—I don't know what the trouble is, unless paralysis. I doubt that rearing a new queen would help.

Swarms Leaving Hives

I am having a lot of trouble with swarms. Three swarms came here from other hives. The first one I put into a nice 8-frame hive with new combs. They stayed about two or three days and then said good by to us. The next one was a baby swarm, not much larger than one of our large Oregon apples. I put it in a hive and put them in a small space and gave them two frames with a little capped over honey. The next day I found the queen was dead and the bees gone. The last one I gave more attention. I put them in a hive and gave them plenty of honey. (I thought may be the lack of honey was the trouble) They came out and went into a tree, but not the one I took them from. I put them back and they stayed a few days, and today they are gone. Where did I fail? Oregon.

Answer.—Without knowing more about the matter I can only guess, but it's a pretty safe guess that the trouble was the usual one, heat or too close confinement. A swarm is always in a state of excitement, and so heated up, and if they are put in the hot sun or if their hive be not sufficiently open, they are likely to think, "This is too hot a place for a home, we'll hike for a cooler place." So for a few days it is well to have the cover partly open and the hive raised; and it should be in a cool place or else shaded in some way. The dead queen you found may have been accidently killed. More likely it was an afterswarm with more than one queen, and all but one were slain in a royal battle.

Young Queens—Prevent Increase

1. How long after the prime swarm issues forth does the young queen hatch?

2. Is it right to destroy all queen-cells but one right away after the swarm comes out?

3. In placing the Alley trap in front of the hive to catch the drones, is there any danger of capturing the queen? Does the queen ever come out of the hive after her wedding flight, and at any other time besides when she comes out with the swarm?

4. How would this work if I didn't want an increase. Prevent all swarming for two years, and keep the same queen, and after that time let them swarm once or buy a young queen; go to the hive every week and keep on destroying all queen-cells and give them no chance to rear a queen. California

Answers.—1. Ordinarily the first virgin leaves her cell about a week after the issue of the prime swarm. If, however, the swarm be delayed a day or more by bad weather, then the time of her emergence after the swarming will be lessened a day or more. It may also be increased in case the prime swarm issues before the first queen-cell is sealed.

2 Yes; although there is a possibility that you may not leave a cell with the best queen in it, and in rare instances there may be no live queen in it. If you are willing to take the trouble, there is a better way. About a

week after the first swarm has issued, go to the hive every evening when the bees have stopped flying, put your ear to the hive and listen. When the first virgin has emerged from her cell, you will hear her piping, a shrill high-pitched voice, saying pe-e-e-eep, pe-e-eep, several times, each time shorter than the previous time. Then the virgins yet in their cells will reply, "Quahk, quahk, quahk," in a coarser and more hurried tone. Next morning kill *all* the cells in the hive, paying no attention to the queen at liberty. There's a still easier way, a way of getting the bees themselves to do the killing for you. When you hive the first swarm, set it close beside the old hive, facing the same way, or, perhaps better still, set the swarm on the old stand with the old hive close beside it. A week later move the old hive to a new stand 10 feet or more away. The bees will do the rest.

3. A queen may come out more than once on her wedding flight, and she may come out with a swarm; at any other time there's no danger of catching her in a trap.

4. Like enough they may supersede the queen. At any rate, if you can keep them from swarming year after year you needn't trouble about a queen. But it won't work to merely keep killing queen-cells. They'll balk you every time. Don't be afraid to send all the questions you like directly to me.

Buying Bees—Location, Etc.

1. What will a swarm of bees cost in Pennsylvania without a hive?
2. Where would you keep the bees, under a tree or in the sun?
3. What kind of bees would you get?
4. Would you get the bees in Pennsylvania?

PENNSYLVANIA.

ANSWERS.—1. The price of a swarm of bees varies greatly according to circumstances and places. There are places where you might not be able to buy a swarm for $10. In other places you might get plenty of swarms at a dollar apiece. What they can be bought for in your locality you can find out by inquiry easier than I.

2. In Pennsylvania under a tree is better.

3. Probably you can get nothing better than Italians.

4. Other things being equal, the nearer home the better.

Increasing Income by Judicious Selection and Breeding

In a locality where the yearly average production is $3.00 per colony, could one reasonably expect to increase it to $5.00 by judicious breeding? NEW YORK.

ANSWER.—That depends. If the locality is one where the highest type of beekeeping has been carried on for years, with constant attention to quality of stock, and yet the pasturage of such character that only $3.00 per colony can be obtained as an average, then I should say that in an ordinary lifetime it is not likely the intake could be increased even to $4.00 per colony. Such a condition, however, is hardly contemplated by the questioner. If the supposition be that average bees are considered, having had the average management, then I should say that within a very few years the $3.00 could be increased not only to $5.00 but to $6.00, and how much more I do not like to say, for I don't want to be considered a visionary. The fact is I don't believe the average beekeeper has any right conception of the possibilities in beekeeping in the way of improvement of stock and the gains to be made by it.

If there's any one thing more important than another that I would like to urge upon the ambitious young beekeeper, it is to work constantly and persistently toward the improvement of his stock, breeding always from the best. Too often all that he does is to buy from some one a queen supposed to be good, introduce her into a colony, and then let things take just the same course they did before. At that he may be largely the gainer for the amount he has invested. But left to themselves the bees are likely to begin deterioration after the first year or so. The poorer bees are likely to swarm the most, and his increase will be mostly from them, the better blood soon disappearing. Instead of that he should encourage increase from his best stock, keeping close tab on yields so as to know which his best colonies are; rearing at least a few extra queens, so as to have them on hand whenever there is occasion for their use. Let this be kept up year after year, and he will be surprised at the increase in his yields.

REPORTS AND EXPERIENCES

North Carolina Experience

I noticed in the June issue of your most valuable Journal, that you have very little information concerning North Carolina beekeeping. I arrived here April 2, and found the country covered with heavy snow, and after that we had a continuous cold rain for two weeks, so you see it was a hard start for me.

I bought 61 colonies of bees, 17 in movable frame, and 47 in old fashioned log hives. With the movable frames I had it easy, but with log hives I had an awful time to transfer them, but I succeeded. I set the log hives upside down and put my hives on top, and thought they would go in when they got ready; but some did not, so I drummed them up and put a queen-excluder between and kept on adding bodies, three and four high. After three weeks I set the old hives sideways for a week, and then took them away empty.

I brought 266 empty hives with me, and I have them nearly all full from those above mentioned. I hope to report later how much honey and how much more increase I will make PETER SCHAFFHOUSER.

Havelock, N. C., June 12

Outlook Not Bright

The outlook for a big honey crop is not so bright now as it was in April. Swarms are coming sparingly. The weather is too cool and wet. RUDOLPH UMLAUFT.

Dorchester, Wis., June 21.

Poor Wintering, But Good Prospects

Bees are not doing very well as yet; it is cold and wet. My wintered swarms came out very poorly. Out of 40 hives put into the cellar last fall, but 22 came through. They died after having been taken from the cellar. I am in northwest Connecticut, and have already had five strong swarms. We are hoping for a better crop, as we have more corn, buckwheat and white clover than in other years. We like your journal very much. F. B. REED.

Lakeville, Conn., June 25.

Late Season

The season here is very backward, the first sweet clover bloom is just opening. I believe, however, that after the abundant rains we can look for a good flow, and coming late there will be lots of bees to take care of it. A. V. SMALL.

St. Joseph, Mo., June 15.

Good Prospects

My loss on bees from prolonged cold spells last winter and poor honey has been heavier than for many years, but I kept on feeding those that were left, and they are starting nicely. There are not many bees left in the county. Our honey crop last year was the poorest in many years, as white clover was all killed by two drouthy seasons.

We are having excessive rains, and the white clover is getting a good start. The linden bloom is extra fine, so we may expect a medium honey crop. MAX ZAHNER, SR.

Lenexa, Kans., June 22.

Good Flow On

The bees have been doing finely here the last three weeks. There is the best honey flow I have known for several years. I started with 12 colonies, and now have 36. I bought 9 of these and 2 were given to me. I cut one bee tree and secured a fair sized swarm, and I found one swarm. The other colonies I made by artificial increase. Some

WALTER WRIGHT IN HIS APIARY AT RIVES JUNCTION, MICH.

of the new swarms are storing honey. We had another heavy rain last evening, and it looks now as though the white clover would run well into August.

Swarming is still going on in this locality. I have heard of several swarms. The bees in my home and out-yard do not show much inclination to swarm. I have done quite a little transferring and requeening for other people this season. J. W. Stine.

Stockton, Iowa.

Too Much Rain

It looks very discouraging. We had 21 days in June with rain, and 6 out of 8 days so far this month that it has rained. One day it is warm, the next day or two it rains; then we have a cold spell so the bees will not fly. Clover never stood or bloomed better and there is plenty of bloom yet; would probably get one-half crop if it only stopped raining and warmed up.

Frank Langohr.

Columbia City, Ind., July 15.

Clover Plentiful

Bees are doing well here this season. The greatest amount of white and sweet clover for years. Only drawback is too much rain. I think the excessive rains will keep the clover blooming for some time to come.

Topeka, Kans., July 16. O. A. Keene.

Ohio Field Day

The second annual field meeting of the Ohio Beekeepers' Association will be held at the apiaries of Fred Leininger & Son, Delphos, Ohio, Aug. 4. The day will be spent in visiting the home and out-apiaries, and the evening will be taken up with a program to be arranged later. E. R. King, *Sec.*

Conditiona in California

Our honey season in southern California is drawing to a close. There has been, on a conservative estimate, about an average of a half crop in the southern half of the State, with the exception of Imperial county, where, from the best of authority, it is estimated all the way from a failure to 50 percent of their usual crop. This is due to the heavy winds which occurred in that section during May and June.

Reports from northern California are that there is no honey taken to date. Everything late, and at present outlook there cannot be over three-fourths of a crop, and probably not that.

The quality of the honey this year is for the most part extra good. In the sage belt, up to the coming in of the sumac bloom, the honey has been water-white, of exceedingly heavy body. This has given the market an unusual percentage of light honey in proportion to the crop yielded.

Prices are rather better than last year, white honey bringing 5½ to 5¾ cents wholesale to the buyers. While there have not been many buyers in the market, some firms have bought heavily, the Guggenheim Company for one. This surely shows wisdom on the part of the buyer, as this quality of honey is not produced every year. Some producers are holding for higher prices.

The white sage has given a good flow this year, better in our immediate locality than the black, which is an unusual thing. This, I believe, is due to the damage done by the moth which worked on the black during the damp weather in April and May. Wild alfalfa has given a light yield here.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

Phelps' Golden Italian Bees are hustlers.

Queens from the Penn Co. See our large ad. elsewhere in this Journal.

Vigorous prolific Italian queens, $1.00 each; 6 for $5.00. A. V. Small,
2302 Agency Road, St. Joseph, Mo.

Golden all-over Queens of Quality. Untested, 75c; tested, $1.50.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

Queens of Moore's strain of Italians. Untested, $1.00 each; 6 for $5.00. Less in larger numbers. P. B. Ramer, Harmony, Minn.

For Sale—75 colonies of bees in 8 and 10 frame Standard Dovetailed L. hives. A No. 1 condition. J. F. Turpin, Carrollton, Mo.

For Sale—Untested Golden Italian queens 60c each, Hybrids, 30c.
J. F. Michael, Winchester, Ind.

For Sale—Bright Italian queens at 55 cts. each, or $6.00 per dozen. Safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala.

Goldens that are golden. Untested, $1.50. Tested, $3.00 to $20.00. Send for booklet.
Geo. M. Steele,
4527 Sansom St., Philadelphia, Pa.

Italian and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.
Grant Anderson, San Benito, Tex.

Italian Queens for sale this season at 60c each; $7.00 per dozen. Ready April 15. Safe arrival guaranteed. T. J. Talley,
Rt. 3, Greenville, Ala.

Place your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens. John W. Pharr,
Berclair, Tex.

Quirin's superior improved queens and bees are northern bred, and are hardy. Orders booked now. Over 20 years a breeder. Free circular. H. G. Quirin, Bellevue, Ohio.

My Famous Bright Italiam Queens will be 55c each after July 1. Send for price list. Safe arrival and satisfaction guaranteed.
M. Bates, Rt. 4, Greenville, Ala.

Superb Golden and 3 banded queens at $1.00 for one; $7.50 for 12; $32 for 50; $60 per 100. Bees in pound packages in season.
Frank A. Leib, R. F. D. 7, San Jose, Calif.

A One Pound Swarm of bees with choice Italian queen, $2.50; six for $13. A splendid way to make increase cheaply with good stock. Untested Italian queens, 75c each; six, $4.00; 25 for $15. Order now.
J. B. Hollopeter, Pentz, Pa.

Italian Queens — Breeders, $2.50, $5.00; and $10. Untested, $1.00 each; six for $5.00, $9.00 per dozen. Doolittle & Clark,
Marietta, N. Y.

Italian Bees, 2 lbs. $1.50, or with queen and frame of brood, $2.50; black bees, 65c a pound. Free from disease. Fine fruit and pasture land, $4.00 an acre.
C. H. Cobb, Belleville, Ark.

For Sale—About 200 colonies in 10-frame hives; extractor and other necessaries; in good climate and fair location. Write or come and see. M. B. Bailey, Agt.
Christine, Tex.

Young blood brings profits. In your fall requeening try N. Mex. queens. They lay; they pay. For bees, queens and nuclei my prices will interest you.
S. Mason, Hatch, N. Mex.

Pure Italian Queens—Guaranteed; by return mail. One, $1.00; 6, $4.25; 12, $8.00; 50, $32; 100, $60. Also bees by the pound, nuclei and full colonies. Please send for free circular. J. E. Wing,
155 Schiele Ave., San Jose, Calif.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Italian Queens, also the Golden Beauties and Carniolans. Tested, $1.00. Untested, 75c each. For bees by the pound and queens in lots write for prices. Page Bankston,
Buffalo, Tex.

The Secret of Success is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and $1.00 for tested G. W. Moon,
1904 Adams St., Little Rock, Ark.

Queens, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 00c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

Three-Banded Italian Queens ready April 1, of an exceptionally vigorous and long-lived strain of bees They are gentle, prolific, and good honey gatherers. Untested, $1.00; 3, $2.50; 6, $4.50; 12, $8.00. Tested, $1.25; 6, $6.50; 12, $12. Jno. G. Miller,
723 So Carrizo St., Corpus Christi, Tex.

Notice—R. A. Shults will sell Italian queens in the season of 1915. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00. Breeders, $5.00. Bred from Moore and Doolittle stock. R. A. Shults.
R. F. D. 3, Cosby, Tenn.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

I can supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed'
I. N. Bankston, Buffalo, Tex.

For Sale—Golden Italian queens that produce golden bees and good honey gatherers. Tested, $1.00. Select tested, $1.25. Untested, 60c; dozen, $7.00.
D. T. Gaster, Rt. 2, Randleman, N. C.

For Sale—Between 60 and 70 colonies of Italian bees on Hoffman frames in good condition and good location, in sunny southern Florida; a house 10x20 feet built in sections, household goods chickens, etc., at reasonable price. Bees make honey in winter, Reason for selling, too old.
Address, P. O. Box 217, Fort Lauderdale, Fla.

Gray Caucasians—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application. J. J. Wilder, Cordele, Ga

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For Sale—Queens, three-band Italians. Extra good strain. Their bees are great hustlers. Only drones from selected queens near mating yard. Untested, one, $1.00; 6 for $4.50; 12, $8 00. Ready June 15. When ordering, state time within which queens are wanted. They will be mailed promptly or money returned. D. G. Little, Hartley, Iowa.

For Sale—Three-banded Italian queens from the best honey-gathering strains, that are hardy and gentle. Untested queens, 75c; 6, $4 25; 12, $8.00. Tested queens, $1.25; 6, $7.00; 12, $12. Selected queens, add 25c each to above prices, Breeding queens, $3.00 to $5.00 each. For queens in larger quantities, write for prices and circulars.
Robert B. Spicer, Wharton, N. J.

HONEY AND BEESWAX

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale—Light extracted honey, 8c; amber, 7c; in ten case lots, ½c less; two 60 lb. cans to case. H. G. Quirin, Bellevue. Ohio.

For Sale—Raspberry, Basswood, No. 1 white comb, $3 00 per case; fancy, 3.25; 24 Danz. sections to case; 6 to 0 cases to carrier. W. A. Latshaw Co., Clarion, Mich.

FOR SALE

Watch to trade for printing press. Dr. Bonney, Buck Grove, Iowa.

For Sale—I. H. C. Truck in fine condition and running order. Will sell at a bargain; have no use for it. Address,
L. Werner, Edwardsville, Ill.

For Sale.—In the famous Snake and Boise River valleys, surrounded by thousands of acres of alfalfa and sweet clover' 500 colonies of bees; 1915 honey crop supplies and equipment. Randall & Ross, Nampa, Idaho.

HONEY LABELS

Honey Labels and Printing. Catalog free Liberty Pub. Co., Sta. D, Box 4H, Cleveland, O

SUPPLIES.

For Sale—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

For Sale—I am selling foundation and paying the freight to your station anywhere in La. Root's goods for sale. Send me your orders. Am paying 28c cash for wax or 30c in trade delivered here.
J. F. Archdekin, Big Bend, La.

For Sale—Friction-top pails, 5-lb. size per 100, $4.50; 10-lb. size, $6.25 per 100; 60-lb. cans, two in a case, 10 cases or more, 60c; 25 cases, 59c; 50 cases or more, 58c per case. All f. o. b. Chicago. A. G. Woodman Co.,
Grand Rapids, Mich.

Standard Dovetailed Hives shipped direct from factory in Iowa. Fine 8 frame for $6.00. Hoffman frames, $2.75 per hundred. Plain sections, $4.20 per M. Write for prices on what you need—a full line. Queens, 50c each. Write for large lots in July, August.
The Stover Apiaries, Mayhew, Miss.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

WANTED

Wanted to hear from owner of good farm for sale. Send cash price and description.
D. F. Bush, Minneapolis, Minn.

NEW ENGLAND BEE KEEPERS

Everything in Supplies

New Goods. Factory Prices.

Save Freight and Express Charges

CULL & WILLIAMS CO.,
Providence, R. I.

A Nice

1 pound package Italian bees with queen, $1.25; 2-fr. nuclei with queen, $1.50. Shipped C. O. D.

ROSEDALE APIARIES
Big Bend, Louisiana

ARCHDEKIN'S FINE ITALIAN QUEENS—3-BANDED

Persistent—Profitable—Production—of honey. That's what each of my queens stands for. Reared under most favorable conditions in an ideal location, they are beautiful to look at and wonderful honey gatherers. Safe arrival and satisfaction guaranteed. No disease. Untested, $1.00 each; 6 for $5.00; dozen, $9.00. Special price in quantities. Root's goods for sale.

J. F. ARCHDEKIN, BIG BEND, LA.

SUPPLIES AND BEES

If you need supplies or bees shipped promptly, write us. Our stock is complete. No delays. Chaff and single walled hives. Bees by the pound, nucleus or full colony. Untested queens, $1.00. Tested, $1.25. Catalog free.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

HONEY WANTED

We will need several carloads of extracted honey. In offering your honey, be sure to send sample that will show true body, color and flavor. Also quote your lowest price, f. o. b., your shipping point in your first letter, and state when gathered.

All honey should be in new cans and cases, properly marked and graded according to standard rules. Best grades will have preference. All cans must contain 60 lbs. net.

DADANT & SONS, Hamilton, Ill.

TENNESSEE-BRED QUEENS

43 Years' Experience in Queen Rearing—Breed 3-Band Italians Only

	Nov 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1.50	$7.50	$13 50	$1 25	$ 6.50	$11 50	$1.00	$ 5.00	$ 0.00	$ .7	$ 4 00	$ 7.50
Select Untested	2.00	8 50	15.00	1 50	7 50	13 50	1.25	6.50	12.00	1.00	5 00	0.00
Tested	2.50	13 50	25.00	2.00	10 50	18 50	1 75	0 00	17.00	1.50	8 00	15.00
Select Tested	3.00	16 50	30.00	2.75	15.00	27.00	2 50	13.50	25 00	2 00	10 00	18.00

Bees by the pound, 1 lb., $1 25; 2 lb., $2 25; 3 lb., $2.75.
Nuclei (no queen) 1 fr. $1 50; 2 fr., $2.15; 3 fr. $2.75; 4 fr., $3.50; pure 3-band Italians.
Select queen wanted, add price.

Capacity of yard, 5000 queens a year—Select queen tested for breeding, $5.00
The very best queen tested for breeding, $10

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

JOHN M. DAVIS, SPRING HILL, TENN.

J. W. K. SHAW & CO.

Are still filling orders for queens by **return mail.** Their strain of three-banded Italians is well known. The industry and gentleness of bees, and size and prolificness of queens, show the care taken in breeding. Never a case of foulbrood among these bees Their apiary was established in 1886.

Tested queens, $1.00. Untested queens, 75c; $7.00 per dozen. Also bees by the pound, 1, 2 and 3 frame nuclei.

J. W. K. SHAW & CO., Loreauville, La.

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

HONEY AND BEESWAX

CHICAGO. July 17.—At this writing we have no arrivals of white comb honey of the new crop from surrounding country, but the southern States have sent in more or less comb honey, which has sold at from 12½@18c per pound, according to color, flavor and appearance. The demand has practically been confined to the best grades, as is always the case at this time of the year.

More or less extracted honey is offered, but meets with very little demand. None of the larger buyers are on the market; therefore, prices are without change from recent quotations with quite a quantity carried over of the yield of 1914.

Beeswax is steady and good sale at from 30@32c per pound, according to color and cleanliness. R. A. BURNETT & CO.

INDIANAPOLIS, July 19.—There is an increasing demand for honey, especially comb, but at this writing the market is practically bare. New crop has not arrived yet. Best grades of extracted in 60-pound cans sell for 10@12c. No. 1 choice white comb is bringing $4.00 per case. For beeswax we offer 28c cash or 30c in exchange for bee supplies.
WALTER S. POUDER.

DENVER, July 19.—No new comb honey available yet. We quote first-class extracted honey at the following local jobbing prices: White, 8½@8¾c; light amber, 8@8¼c; amber, 7@8c. We buy beeswax all times, and offer at present 26c per pound in cash and 28c per pound in trade for clean yellow beeswax delivered here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

KANSAS CITY, MO., July 17.—The receipts of new comb honey are more liberal now, and the demand is good. The supply of extracted honey is large, but the demand is light. We quote: No. 1 white comb honey, 24 section cases, $3.50 to $3.75; No. 2, $3.00 to $3.25. No. 1 amber, 3.25 to $3.50; No. 2, $2.75 to $3.00. Extracted, white, per pound, 7½c; amber, 6@7c. Beeswax, No. 1, 28c; No. 2, 25c.
C. C. CLEMONS PRODUCE COMPANY.

CINCINNATI, July 17.—Business is not good in the honey line, although the demand is looking up somewhat. We quote No. 1 comb honey at $3.75 to $4.00 per case, and extracted amber at 5½@7c, and white from 8@10c a pound. We are paying 28c a pound cash for beeswax or 30c a pound in trade.
THE FRED W. MUTH CO.

LOS ANGELES, July 18.—The market on California honey at present is about as follows; Comb, white, $3.00 per case; light amber, $2.75. Stocks ample for present requirements. Extracted, light amber alfalfa, 3¾c per pound; light amber sage, 4¼c per pound; water-white sage, 7c; white orange, 7c (new crop). Beeswax, 28c. All f. o. b. Coast. HAMILTON & MENDERSON.

NEW YORK, July 19.—There is nothing new to report in regard to comb honey. Some stock has been carried over from last year which kept in very good condition, and as the season will open for new crop within the next month or so, there will be no trouble in disposing of it. There is no demand at present, to speak of, but in another month from now, the season will open and we expect a fairly good demand. We cannot tell as yet what the crop will be in the East or middle West, and it will depend on the weather during the next three or four weeks. There are no prices established as yet, and there will not be for some time to come.

Extracted honey is in fair demand, and from correspondence we are receiving right along, it is evident that a good crop has been produced throughout the South, as well as in California and the far West.

West Indian honey is also arriving freely. We quote nominal: California and far western, 5½@7c per pound, according to quality; southern, average grade, 50@55c per gallon; fancy grades, 65@75c per gallon. West Indian, 45@55c per gallon, according to quality. HILDRETH & SEGELKEN.

Grading Rules of the Colorado Honey-Producers' Association, Denver, Colo., Adopted Feb. 6, 1915.

(*All honey sold through the Colorado Honey-Producers' Association must be graded by these rules.*)

COMB HONEY.

FANCY.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, comb and cappings white, or slightly off color. Combs not projecting beyond the wood, sections to be well cleaned No section in this grade to weigh less than 12½ ounces net or 13½ ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 12½ ounces."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NO. 1.—Sections to be well filled, combs firmly attached, not projecting beyond the wood and entirely capped, except the outside row next to the wood. Honey, comb and cappings from white to light amber in color. Sections to be cleaned. No section in this grade to weigh less than 11 ounces net or 12 ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 11 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NO. 2.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 ounces net or 11 ounces gross. Also of such sections that weigh 11 ounces net or 12 ounces gross, or more, and have not more than 50 uncapped cells altogether, which must be filled with honey. Honey, comb and cappings from white to amber in color. Sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

COMB HONEY THAT IS NOT PERMITTED IN SHIPPING GRADES.

Honey packed in second hand cases.

Honey in badly stained or mildewed sections.

Honey showing signs of granulation.

Leaking, injured or patched up sections.

Sections containing honey-dew.

Sections with more than 50 uncapped cells or a less number of empty cells.

Sections weighing less than the minimum weight.

All of such honey shou'd be disposed of in the home market.

EXTRACTED HONEY

Must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained and packed in new cans, 60 pounds shall be packed in each 5 gallon can, and the top of each 5-gallon can shall be stamped or labeled, "Net weight not less than 60 pounds."

Extracted honey is classed as white, light amber and amber, the letters "W," "L. A.," "A." should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new, substantial cases of proper size.

STRAINED HONEY

Must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained, and if packed in 5-gallon cans each can shall contain 60 pounds. The top of each 5-gallon can shall be stamped or labeled "Net weight not less than 60 pounds." Bright clean cans that previously contained honey may be used for strained honey.

HONEY NOT PERMITTED IN SHIPPING GRADES.

Extracted honey packed in second-hand cans.

Unripe or fermenting honey, weighing less than 12 pounds per gallon.

Honey contaminated by excessive use of smoke.

Honey contaminated by honey-dew.

Honey not properly strained.

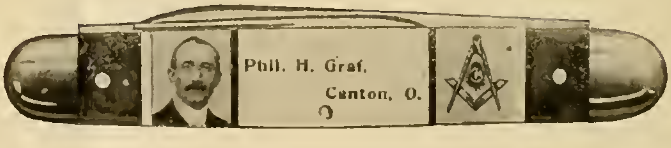
Help Advertise Honey

—By putting—

EAT HONEY

Stickers on all letters, packages, shipments, etc. Printed in bright red, already gummed. Price, postpaid, 500, 20c; 1000, 30c.

BEE - KEEPER'S NOVELTY POCKET - KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

NOW IS THE TIME TO REQUEEN

Now is the time to get ready for next year. If you are just taking off a big crop of honey, your queens will be more or less worn out by their enormous egg production, and will profit by being replaced in many instances.

Possibly you look for a big crop next year. Now is is the time, then, to weed out your poor stock, your black stock, or your older queens. You should have young and vigorous queens to start the season next year.

Under any circumstances, weed out your poor stock.

We are in a position tournish pure stock, either leather colored, three-band, or golden, as you prefer, in very short order and at reasonable prices, and guartee safe arrival and pure stock.

Our prices for the balance of the season are as follows:

Pure Italian Stock

1	Untested	$ 1.00
6	"	4.50
12	"	8.50
25	"	16.50

Tested queens, $1.50 each.

Prices on larger lots on application.

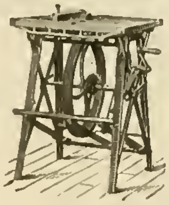
Caucasian Queens

There is a growing demand for queens of this race of bees. We are prepared to furnish these queens at the same prices as above in lots of six or less.

Write at once with order and remittance and state approximate date upon which you wish queens to arrive.

AMERICAN BEE JOURNAL
Hamilton, Illinois

BARNES' Foot-Power Machinery



Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it." Catalog & price-list free

W. F. & JOHN BARNES
205 Ruby St., ROCKFORD, ILLINOIS.

DON'T DELAY

Sending in your order for bees or queens. One pound bees with choice young Italian queen and directions how to build up to one or more colonies by fall, $2 50; six for $13.

Choice Italian queens, untested, 75c each; six, $4 00; 25 for $15. Bees and Queens my specialty. Satisfaction guaranteed.

J. B. HOLLOPETER, Box 256, Pentz, Pa.

Fine Italian Queens

Select 3 and 5 banded stock; gentle, hardy and prolific honey gatherers. No disease. Price, 1 to 3, $1.00 each; 4 to 6, 90c each. Larger quantity, $10 per doz. Prompt deliveries. Pure mates. Safe arrival and absolute satisfaction guaranteed. Send me a trial order'

CHAS. M. DARROW
Star Route, - Milo, Mo.

OUR VERY BEST IS THE VERY BEST

BEE SUPPLIES

Best Sections, Best Shipping Cases
Best of all Supplies

Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready now. Send your name and get one.

H. S DUBY & SON, St. Anne, Ill., carry a full line of our goods.

AUG. LOTZ CO. BOYD, WIS.

QUEENS OF QUALITY

THREE BANDED ITALIANS

First class untested queens remainder of the season, 60 cts. each; $7.00 per dozen. Satisfaction guarnateed.

J. I. BANKS, DOWELLTOWN, TENN.

MARZ STRAIN OF ITALIANS

A distinctive strain of honey gatherers, with fixed characteristics, the result of 25 years careful breeding.

Untested queens	$ 1 00
Tested queens	2.00
Breeding queens	10.00

Write for circular.

WALKER & MARZIAN APIARIES
Box 373, New Albany, Indiana

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

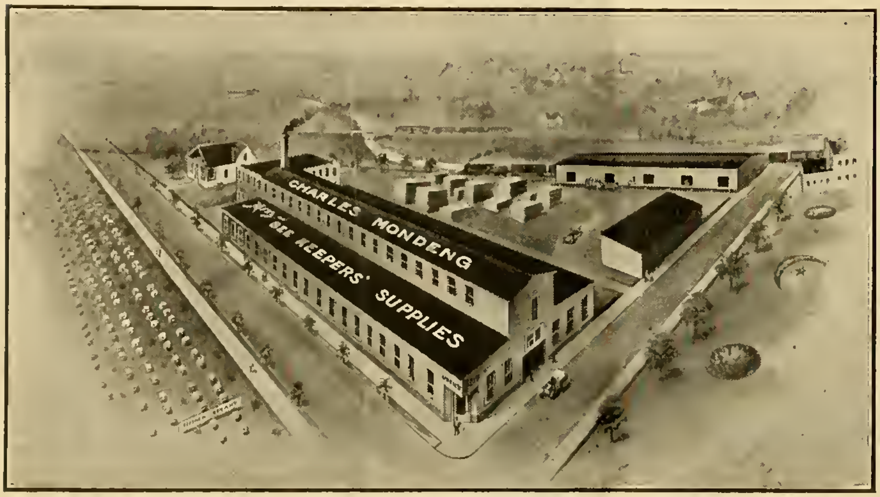
U.S.
MAIL
Mr. B. MAN
BEEVILLE

"NUTMEG QUEENS"

BY RETURN MAIL

Leathered-colored Italians. Hardy, northern reared. Up-to-date methods. Until June 1, tested, $2.00. After $1.50. Untested, $1.00; 12 for $10. Large orders a specialty.

A. W. YATES 3 Chapman St. HARTFORD, CONN.



MILLIONS OF

Fine Sections

Thousands of Hives, the best ever made of white pine lumber, ready for prompt shipment. Don't miss them. My goods are guaranteed. A trial order will prove it. 200 colonies of Adels and Carniolans. If you want a square deal, send for my Catalog and Price List. I will pay highest market price for Beeswax in trade.

CHARLES MONDENG
146 Newton Ave. North
Minneapolis, Minnesota

Three Carloads of Bees

We are now in a position to take care of any and all orders for Bees, having recently received one carload of Bees from our Virginia apiary and another from Texas, while a third carload is now on the way. These are fully up to our usual standard; in fact, we consider them the finest stock of Italian bees that we have ever received. One of our friends in Canada writes us as follows:

AYLMER, ONT., May 25, 1915.

You advised me to start four years ago, at sixty years of age; have over eighty colonies in modern ten-frame hives, and many beautiful Italians from stock purchased through O. B. A. from your firm. R. H. LINDSAY.

While from Mississippi comes this testimonial;

BAY ST. LOUIS, MISS.

THE A. I. ROOT COMPANY, Medina, Ohio—

Dear Sirs:—The five-frame nucleus I received last week arrived in fine shape and working fine. They are the gentlest bees I have ever handled. Do not need any smoker or veil with them. Thanking you for prompt shipment.

I beg to remain, yours truly, C. F. CARPENTER.

Italian bees in 1-lb. package, $2.00; 2 lbs., $3.25; 3 lbs., $4.00.
One frame nucleus without queen, $2.00; 2 frame, $3.00; 3 frame, $3.50; 5 frame, $4.50,

Colony in 8 frame dovetailed hive, no queen, $8.50.
Colony in 10 frame dovetailed hive, no queen, $9.00.

Untested Italian queen for any of the above, $1.00.
Tested " " " " " " 2.00.

THE A. I. ROOT COMPANY, **Executive Offices and Factory,** **MEDINA, OHIO**

—Branch Offices—

New York, 139-141 Franklin St.
Philadelphia, 8-10 Vine St.
Chicago, 215 West Ohio St.
St. Paul, 850 Payne Ave.

San Francisco, 58 Sutter St.
Des Moines, 915-917 Walnut St.
Syracuse, 1631 West Genesee St.
Indianapolis, 859 Massachusetts Ave.

Zanesville, Ohio.
Mechanic Falls, Maine.
Washington, 1100 Maryland Ave., S. W.
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MARSHFIELD GOODS

BEE KEEPERS :—
We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
Our Catalog is free for the asking.

Marshfield Mfg. Co., Marshfield, Wis.

EARLY ORDER DISCOUNTS WILL
Pay You to Buy Bee Supplies Now
30 years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog today.
LEAHY MFG. CO., 90 Sixth St., Higginsville, Missouri

START THE SEASON RIGHT

By using **Dittmer Foundation** the bees like it for it's made to just suit them, and is just like the Natural Comb they make themselves.

Send for prices on having your Beeswax made into Comb Foundation, which includes all freight charges being paid.

All other Supplies in stock

Gus Dittmer Company, Augusta, Wisconsin

THE TRUTH ABOUT FLORIDA

To learn the truth about a country you want to read the agricultural paper which the growers of that country read, and THE FLORIDA GROWER, published at Tampa, Florida, is Florida's one agricultural weekly. It is unique in the agricultural field. It carries more advertising than any agricultural paper in the country; it has a more interested body of readers; it is instructive and entertaining. Sample copy free or 50 cents for a four months' trial subscription. 50 cents back if not satisfied.

THE FLORIDA GROWER
Box A-B, Tampa, Florida

FREEMAN'S FARMER North Yakima, Wash.
Successor to Northwest Farm and Home
69 YEARS OLD
If you want a descriptive and agricultural magazine, it will inform you all about the methods in the Pacific Northwest.
Send One dollar and have the magazine sent for one year. Cut rate of one-half price now on.

Beekeepers' Supplies

Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description. Shipping-cases, Section-holders. Comb-foundation, Smokers, etc.
Get my prices before placing your orders.
R. H. SCHMIDT
Rt. 3, Box 209, Sheboygan, Wis.

QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate; purest of the pure.

GREY CAUCASIANS

Bred strictly in the light of **Mendel's Laws of Heredity**; no guess, but positive results. The pioneer **scientific** queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special **isolated mating station** on bald open prairie, not a tree within miles—no chance for gypsy drones.

CHAS. W. QUINN
609 W. 17th Ave., Houston Heights, Texas

TRY MY FAMOUS QUEENS
From Improved Stock

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band Golden, 5-Band and Carniolan

bred in separate yards, ready March 20. Untested, 1, $1.00; 6, $5 00; 12, $9.00; 25, $17.50; 50, $33; 100, $65 Tested, 1, $1 50; 6, $8 00; 12, $15.00. Breeders of either strain, $5 00. Nuclei with untested queen, 1-frame, $2 50; six 1-frame, $15 00; 2 frame, $3 50; six 2-frame, $20.40; nuclei with tested queen, 1-frame, $3 00; six 1-frame, $17.40; 2 frame, $4.00; six 2-frame, $23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction and prompt service guaranteed.
D. E. BROTHERS, Attalla, Ala.

Make Hay While the Sun is Shining

Gather your honey crop while there is a chance. If you are in need of supers, sections, comb foundation, frames, etc., write or wire us, and we will send your order out the same day.

We carry a large stock, and can fill any and all orders at once and without delay **Root's Goods** are synonymous with perfect workmanship, the best of raw materials, and **Weber Service** means attention to details and prompt shipments. Save freight. Order from us.

C. H. W. WEBER & CO.,

2146 Central Avenue, Cincinnati, Ohio

DADANT'S FOUNDATION

DADANT'S FOUNDATION

DADANT'S FOUNDATION

Rendering Combs

Cappings or slumgum is a "mussy" job at best. We are equipped for this work, and will render yours for you on shares. Send for our terms. For your share of the wax we will either pay you cash, ship you goods in exchange or manufacture it into

Dadant's Foundation

Known and liked the world over because it is just like the combs the bees make themselves.

Bee Supplies

We carry a large stock of all kinds of bee supplies. Drop us a card, making known your wants. We guarantee satisfaction in every way.

DADANT & SONS,
HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

SEPTEMBER, 1915

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AMERICAN BEE JOURNAL

ESTABLISHED IN 1861

OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY

American Bee Journal

1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec15" on your label shows that it is paid to the end of December, 1915.

SUBSCRIPTION RECEIPTS.—We do not send a receipt for money sent us to pay subscription, but change the date on your address-label, which shows that the money has been received and credited.

Advertising Rate, Per Agate Line, 15c.

14 lines make one inch.

Nothing less than 5 lines accepted.

DISCOUNTS:

3 times 14c a line
6 " 12c "
9 times 11c a line
12 " (1 yr.) 10c a line

Reading Notices, 25 cents, count line.
Goes to press the 23d of the preceding month.

ITALIAN NORTHERN BRED QUEENS Superior winterers, second to none. My free list explains it all. Untested, 75c; select tested, $1.50. Bees by the pound or half pound. Plans, "How to Introduce Queens," 15 cents; "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, GLENWOOD, MICH

Bee-Supplies

LET US FIGURE WITH YOU

We know we can satisfy you on quality. Write for catalog.

C.C.CLEMONS BEE-SUPPLY CO.
Dept. S., Kansas City, Mo.

MARZ STRAIN OF ITALIANS

A distinctive strain of honey gatherers, with fixed characteristics, the result of 25 years careful breeding.

Untested queens	$ 1 00
Tested queens	2 00
Breeding queens	10 00

Write for circular.

WALKER & MARZIAN APIARIES
Box 373, New Albany, Indiana

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

SELL YOUR QUEENS IN CANADA

IN the Province of Ontario alone there are 11,000 persons producing honey. A very conservative calculation means that there are 50,000 Queens. If you have Queens to sell to Canadian bee men, say so in The Canadian Horticulturist and Beekeeper, the only bee publication in Canada. It is the official organ of the Ontario and New Brunswick Beekeepers' Associations.

Classified rate 3 cents per word—each single number and sign counting as one word. Cash in advance.

Specimen copy on request.

The Canadian Horticulturist and Beekeeper
Peterboro, Canada

INCREASE THE YIELD OF YOUR FARM

The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre. We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

Everybody knows that by following the Campbell System of Soil Culture, crop yields have been doubled in every State of the Union from New York to California. Why not learn what the principles of the Campbell System are and adopt them? You can get all this and a thorough agricultural education without leaving home by taking a course in the

Campbell Correspondence School of Soil Culture

You can have your choice of eight courses, Soil Tillage, Soil Improvement, Small Farming, Horticulture, Irrigation, Dry Farming, Farm Engineering and Animal Husbandry, all for a nominal tuition fee, no board to pay, no books to buy, everything furnished, and you can use your spare time while still running your farm or holding your job.

We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad, but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

Campbell Scientific Soil Culture Company Billings, Montana

We are in the Market

To buy both Comb and Extracted honey. Write us what you have to offer, naming your best prices delivered. Every time an interesting price is named us, we buy and remit the day shipment arrives.

SHIP US YOUR OLD COMB

We render it into wax, and pay the market prices.

THE FRED W. MUTH COMPANY
204 WALNUT STREET "The Busy Bee Men" CINCINNATI, OHIO

TEXAS QUEENS

Italians, the pure three-banded stock from imported mothers. Carniolans, the pure dark grey stock from Carniola. Queens will be ready to ship early in March. No disease. Prices, 75 cents each. $8.00 per dozen.

Circular free

Grant Anderson, San Benito, Tex.

LEGHORN BREEDERS!

Send in your subscription to **The Leghorn Journal** and keep posted on the progress of the Leghorn industry; as it is devoted exclusively to the different Leghorn fowls. Subscription price 50c per year. Special offer—Send us 10c and the names of five of your neighbors interested in Leghorns, and we will send you The Leghorn Journal for three months.

THE LEGHORN JOURNAL
Appomattox, Virginia

Bingham Bee Smokers and Uncapping Knives

NEW BINGHAM
BEE SMOKER
Patented

Have been on the market nearly 40 years, and are the standard in this and many foreign countries. Insist on the genuine improved articles from your dealer or direct from manufacturers.

Postage extra		ship. wt.	Price
Smoke Engine,	4 inch,	28 oz.	$1.25
Doctor	3½ "	26 oz.	.85
Conqueror	3 "	23 oz.	.75
Little Wonder	2½ "	16 oz	.50
Smoke Engine or Doctor in copper 50c extra			
Uncapping Knives, improved Cold Handle			
Stan'd Length	8½ "	20 oz.	.75
Extra long	10 "	24 oz.	.85
Steam Heated 3 feet tubing		36 oz.	2.50

Friction-top pails, 5 lb., size per 100, $4.50; 10-lb. size per 100, $6.25; 60-lb cans two in a case, 10-case lots, 60c; 25-case lots, 59c; 50-case lots, 58c per case, f. o. b. Chicago. State quantity wanted and get our shipping case prices.

Woodman's double-wall Protection Hives, single-wall hives, Good enough Brand Sections, shipping cases, foundation, and all supplies. Send us a list of the goods wanted and let us figure on your 1910 requirements.

A. G. WOODMAN CO., Grand Rapids, Mich.

Wanted

Choice Grades of EXTRACTED HONEY

Send Sample and State Quantity How packed and the lowest price you will take

We are always in the market for **Beeswax**, and pay highest market prices.

Hildreth & Segelken
265-267 Greenwich St., New York, N. Y

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

QUEENS—Golden and Leather-colored

We are in position to fill your orders for queens and bees from date of this "Journal" until October 1, 1915, at following prices:

Prices of one and over	1	6	12
Virgins	$ .50	$2 75	$ 5 00
Untested	.85	4.50	8.00
Select untested	1.00	5.00	9.00
Warranted	1 10	5 50	0.50
Tested	1.50	7 50	13.50
Select tested	1.75	9.00	15.00
Tested breeding	3.00		
Select tested breeding	5.00		
Ex. select test. breeding	7.50		

1 frame nuclei without queen	$1.50
2 frame nuclei without queen	2 75
3 frame nuclei without queen	3.50
Colony 8-frame hive without queen	7.50
Colony 10-frame Danz, without queen	0.50
Colony 10-frame hive without queen	0.50

When queens are wanted with nuclei and colonies, add queens at prices as above for queens.

Bees by Pound F. O. B. Penn., Miss.

½-pound package, wire cage	$1.00
1-pound package, wire cage	1.50
2-pound package, wire cage	2.00

No queen supplied at these prices. Make selection and add to above prices.

All bees and queens shipped from our yards at Penn, Miss. We have no disease, nor do we know of any diseased bees in this State. Our queens are bred from highly selected stock of uniformly marked bees; for gentleness and working qualities they are unsurpassed; they are world-beaters as honey-gatherers. We consider these queens the equal of any on the market, and years of favorable reports substantiate this claim. In ordering you have the choice of selecting three-banders or goldens Prompt attention given to all orders and inquiries. Read The A. I. Root Company's endorsement below.

MEDINA, OHIO, February 6, 1914.
THE PENN CO., Penn, Miss.

Gentlemen:—Replying to yours of February 3, we would state that we have bought a large number of queens of you. We have found them uniformly marked, and of a good stock; in fact, they are first-class in every respect. Another thing, we have always found that you make prompt deliveries, or give us notice promptly when such deliveries could not be made.

THE A. I. ROOT COMPANY.
Per E. R. Root, Vice-president.

Our record last year, about 10,000 queens, and shipments to all important foreign countries; every State in United States and Canada, and only two complaints, which we readily made good. Try us. We are sure to please you.

Our QUEENS all around the world. The sun never sets on a Penn Co.'s queen.

THE PENN COMPANY, Penn, Lowndes County, Mississippi

Representatives of The A. I. Root Company, and Queen Specialists.

SUPPLIES AND BEES

If you need supplies or bees shipped promptly, write us. Our stock is complete. No delays. Chaff and single walled hives. Bees by the pound, nuclens or full colony. Untested queens, $1.00. Tested, $1.25. Catalog free.

I. J. STRINGHAM
105 Park Place, New York
APIARIES: Glen Cove, L. I.

A Nice

1 pound package Italian bees with queen, $1.25; 2-fr. nuclei with queen, $1.50. Shipped C. O. D.

ROSEDALE APIARIES
Big Bend, Louisiana

NEW ENGLAND BEE KEEPERS

Everything in Supplies
New Goods. Factory Prices.
Save Freight and Express Charges
CULL & WILLIAMS CO.,
Providence, R. I.

BUCKEYE CHAFF HIVES
DOVETAILED HIVES
Sections, Comb Foundation
Choice Northern-Bred Italian Queens
Bees by the pound
General Agents for Root's Goods in Michigan
SEND FOR 1915 CATALOG
M. H. HUNT & SON
Lansing, Mich.

FRICTION-TOP
PAILS

For Honey, Syrups, Sorghum, Etc., Etc.

GILLE MFG. CO.
Dept. B,
Kansas City, Mo.

QUEENS OF QUALITY

THREE BANDED ITALIANS

First class untested queens remainder of the season, 60 cts. each; $7.00 per dozen. Satisfaction guarnateed.

J. I. BANKS, DOWELLTOWN, TENN.

PROTECT YOUR BEES AGAINST FOULBROOD

By using "falcon" queens

One of the prominent beekeepers of New York State writes:

"The queens received from you this season have been perfectly satisfactory. For cleaning up foulbrood they cannot be beat. We could not ask for any better queens, and I have not heard any fault found from parties I have sold to."

Can you afford to run the chance of letting foulbrood invade your apiary when **"Falcon"** Italian queens are no more expensive than the ordinary blacks and hybrids which oftentimes cause a catastrophe in an apiary by being so susceptible to foulbrood.

PRICES OF "FALCON" QUEENS—THREE-BANDED ITALIANS, GOLDEN ITALIAN AND CARNIOLANS

After July 1	1	6	12	After July 1	1	6	12
Untested	$ .90	$5.00	$ 9.00	Tested	$1.50	$ 8.00	$15.00
Select untested	1.00	5.50	10.00	Select tested	2.00	10.00	18.00

SAFE ARRIVAL AND SATISFACTION GUARANTEED **DEALERS EVERYWHERE**

RED CATALOG, Postpaid - **"Simplifed Beekeeping," Postpaid**

W. T. Falconer Mfg. Co., Falconer, New York

Where the good bee-hives come from

GOLDEN ITALIAN QUEENS

Mr. Beekeeper, do you want the best queens that money can buy? If so, try this strain of Goldens that for fifteen years has been a leader. All queens reared from superior Golden mothers and mated with select Golden drones; are large, vigorous and prolific; the bees gentle and hustlers, and are noted throughout the United States as a disease-resisting strain. Mated from strong nuclei, three to five full Langstroth frames. No disease. Safe arrival (U. S. and Can.), purity of mating and satisfaction guaranteed. Write for descriptive circular.

PRICES OF QUEENS

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1.50	$ 7.50	$13.50	$1.25	$ 6.50	$11.50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	11.00	18.00

Breeders, $5.00 to $25.

BEN G. DAVIS, Spring Hill, Tennessee

Please mention Am. Bee Journal when writing.

Quality Hill Queens

"The Queens You'll Eventually Buy"

Quality Hill Queens are of a famous strain, greatly improved. All cells are built in 10-frame colonies, brimful of bees, and during a continuous honey flow. For hardiness, gentleness and honey gathering qualities, they are better than most. Four frame nuclei used for mating. Many report them very resistent to European Foulbrood. No disease. Italians.

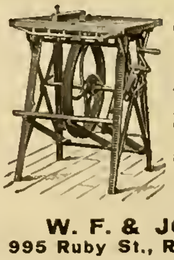
Our Guarantee—All queens will reach you alive, in good condition, purely mated, and will give satisfaction. Queens which prove to be injured in the mails will be replaced if returned. Reference, Plainfield, Ill., State Bank.

	1	6	12		1	6	12
Untested	$ .80	$4.00	$7.50	Tested	$1.50	8.00	$15 00
Select unested	1.00	5.00	9.00	Select tested	2 50	10.00	18.00

Breeders $4.00 up

K. E. HAWKINS, Plainfield, Illinois

BARNES' Foot-Power Machinery



Read what J I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw, It will do all you say of it."

Catalog & price-list free

W. F. & JOHN BARNES
995 Ruby St., ROCKFORD, ILLINOIS.

We Have Decided

Not to change the prices for 1915, and will not mail new catalogs to our customers unless we are requested. Order from last catalog. Send us list of goods wanted for best prices. No one can beat us. We have been in business since 1899. Reference, any mercantile agency.

H. S. DUBY & SON, St. Anne, Ill.

HONEY AND BEESWAX

Chicago, Aug. 16.—Shipments of comb honey are arriving quite freely and are meeting with good demand Sales so far have been at from 17@18c per pound for the No. 1 to fancy grades. Very little amber is offered, but has been has sold at 13@15c per pound, according to color and kind. The quality of the honey is most excellent, and we look for a free consumption.

Extracted is also arriving freely. As yet the demand is very meager. Some lots have not been properly ripened, but the majority of it is of fine quality. Prices for white are ranging from 7@9c per pound with the ambers from 5@7c per pound, depending upon the kind, flavor and quality.

Beeswax is steady at from 30@32c per pound, according to color and cleanliness.

R. A. BURNETT & CO.

Kansas City, Mo., Aug. 14.—The receipts of comb honey are increasing, and prices are lower. There is no change in the condition of extracted honey. We quote as follows: No 1 white comb honey, 24 section cases, $3.50 to $3.60; No. 2, none on the market. No. 1 amber, 3.25 to $3.35; No 2, $2.75 to $3.00. Extracted, white, per pound, none on the market No. 2 amber, 6@7½c. Beeswax, No. 1, 28c; No. 2, 25c.

C. C. CLEMONS PRODUCE COMPANY.

Denver, Aug. 21.—The first of the new crop of comb honey is now coming in and sells locally at the following prices per case of 24 sections: Fancy, $3.60; No. 1, $3.38, and No. 2, $3.15. Crop promises to be light Local prices on extracted unchanged. White, 8½@8¾c; light amber, 8@8¼c; amber, 7@8c. We pay 25c cash and 27c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

Los Angeles, Aug. 20.—Notwithstanding the low prices prevailing on honey and wax, business has not been very lively so far this season. We are having a better demand right now. The present quotations on extracted honey are about as follows: Light amber alfalfa, 3¾c; light amber sage, 4c; water-white sage, 6c; white sage, 5½c. Beeswax is worth about 28c per pound.

Comb honey in carload lots will probably not be ready for shipment until about Sept. 1.

HAMILTON & MENDERSON.

Cincinnati, Aug. 19.—Business is not good in the honey line, although the demand is looking up somewhat. We quote No. 1 comb honey at $3.75 to $4.00 per case, and extracted amber at 5½@7c, and white from 8@10c a pound. We are paying 28c a pound cash for beeswax or 30c a pound in trade.

THE FRED W. MUTH CO.

Indianapolis, Aug. 19.—There is an increasing demand for honey, especially comb, but at this writing the market is practically bare. New crop has not arrived yet. Best grades of extracted in 60-pound cans sell for 10@12c. No. 1 choice white comb is bringing $4.00 per case. For beeswax we offer 28c cash or 30c in exchange for bee supplies.

WALTER S. POUDER.

New York, Aug. 19.—There is nothing new to report in regard to comb honey. Some stock has been carried over from last year which kept in very good condition, and as the season will open for new crop within the next month or so, there will be no trouble in disposing of it. There is no demand at present, to speak of, but in another month from now, the season will open and we expect a fairly good demand. We cannot tell as yet what the crop will be in the East or middle West, and it will depend on the weather during the next three or four weeks. There are no prices established as yet, and there will not be for some time to come.

Extracted honey is in fair demand, and from correspondence we are receiving right along, it is evident that a good crop has been produced throughout the South, as well as in California and the far West.

West Indian honey is also arriving freely. We quote nominal: California and far western, 5½@7c per pound, according to quality; southern, average grade, 50@55c per gallon; fancy grades, 65@75c per gallon. West Indian, 45@55c per gallon, according to quality. HILDRETH & SEGELKEN.

Attractive Prices
ON TIN HONEY CONTAINERS

Just now there is a heavy demand for tin honey containers in Illinois and adjoining territory. A heavy fall honey flow is on. If you need cans or pails write us. We have secured cans at such figures that we can surely save you money.

Write us your requirements and we will give you our best prices

DADANT & SONS
Hamilton Illinois

Grading Rules of the Colorado Honey-Producers' Association, Denver, Colo., Adopted Feb. 6, 1915.

(All honey sold through the Colorado Honey Producers' Association must be graded by these rules.)

COMB HONEY.

Fancy.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, comb and cappings white, or slightly off color. Combs not projecting beyond the wood, sections to be well cleaned No section in this grade to weigh less than 12½ ounces net or 13½ ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 12½ ounces."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

No. 1.—Sections to be well filled, combs firmly attached, not projecting beyond the wood and entirely capped, except the outside row next to the wood. Honey, comb and cappings from white to light amber in color. Sections to be cleaned. No section in this grade to weigh less than 11 ounces net or 12 ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 11 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

No. 2.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 ounces net or 11 ounces gross. Also of such sections that weigh 11 ounces net or 12 ounces gross, or more, and have not more than 50 uncapped cells altogether, which must be filled with honey. Honey, comb and cappings from white to amber in color. Sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

COMB HONEY THAT IS NOT PERMITTED IN SHIPPING GRADES.

Honey packed in second hand cases.

Honey in badly stained or mildewed sections.

Honey showing signs of granulation.

Leaking, injured or patched up sections.

Sections containing honey-dew.

Sections with more than 50 uncapped cells or a less number of empty cells.

Sections weighing less than the minimum weight.

All of such honey should be disposed of in the home market.

EXTRACTED HONEY

Must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained and packed in new cans, 60 pounds shall be packed in each 5 gallon can, and the top of each 5-gallon can shall be stamped or labeled, "Net weight not less than 60 pounds."

Extracted honey is classed as white, light amber and amber, the letters "W.," "L. A.," "A." should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new, substantial cases of proper size.

STRAINED HONEY

Must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained, and if packed in 5-gallon cans each can shall contain 60 pounds. The top of each 5-gallon can shall be stamped or labeled "Net weight not less than 60 pounds." Bright clean cans that previously contained honey may be used for strained honey.

HONEY NOT PERMITTED IN SHIPPING GRADES.

Extracted honey packed in second-hand cans.

Unripe or fermenting honey, weighing less than 12 pounds per gallon.

Honey contaminated by excessive use of smoke.

Honey contaminated by honey-dew.

Honey not properly strained.

MORE MONEY FOR YOUR HONEY

WHEN PACKED IN

LEWIS SUPERB SHIPPING CASES

After you have harvested a nice lot of comb honey do not make a serious mistake by putting it up ready for the market in a cheap appearing case such as a home-made one or that turned out by a local planing mill. The best and most economical (taking the sale of the honey into consideration) case must be turned out with the same careful workmanship and with the same selection of proper material as goes into the making of first-class bee hives and honey sections such as we manufacture.

It is an acknowledged fact that comb honey put up in attractive Lewis Shipping Cases will bring from one to two cents per pound more than the same honey put up in poor cases. Do not cheapen your product by inferior cases. You can afford the best—remember your shipping cases are the show windows for your goods. Your honey will bring more money if well displayed.

INSIST ON THE LEWIS MAKE

Lewis Shipping Cases are cut accurately out of clear, sound basswood lumber. All of these cases are neatly packed, and include the proper size nails for nailing them up.

QUEENS OF "LEWIS" QUALITY

Requeen in September, the month of fall flows, with "Lewis" queens, and guarantee plenty of young bees for winter and a honey harvest next year. Bred for business, these queens are large and vigorous, and especially resistant to European foulbrood. They are reared and mated under the best conditions, and are guaranteed to give satisfaction in every respect, or money refunded without question. Better than most, and as low priced as good queens can be sold. Safe arrival and purity of mating guaranteed. Better order today.

G. B. Lewis Company, Watertown, Wisconsin, Sole Manufacturers

For sale by us and the following Lewis distributers:

CALIFORNIA	W. A. Trickey	Bishop
COLORADO	Colorado Honey Producers' Association	Denver
COLORADO	Grand Junction Fruit Growers' Association	Grand Junction
COLORADO	Delta County Fruit Growers' Association	Delta
COLORADO	Producers' Association	De Beque
COLORADO	A. S. Parson	Rocky Ford
COLORADO	Coffin & Foster	Rifle
COLORADO	J. Roscoe Miller	Montrose
GEORGIA	J. J. Wilder	Cordele
IDAHO	City Grain & Poultry Co	Nampa
ILLINOIS	Dadant & Sons	Hamilton
IOWA	Louis Hanssen's Sons	Davenport
IOWA	Adam A. Clarke	Le Mars
IOWA	H. J. Pfiffner	Emmetsburg
MICHIGAN	A. G. Woodman Co	Grand Rapids
NEW MEXICO	C. F. Reynolds	Artesia
NEW MEXICO	H. H. Brown	La Plata
NEVADA	H. Trickey	Reno
OHIO	Fred W. Muth Co	Cincinnati
OREGON	Chas. H. Lilly Co	Portland
TENNESSEE	Otto Schwill & Co	Memphis
TEXAS	Southwestern Bee Company	San Antonio
UTAH	Foulger & Sons	Ogden
WASHINGTON	Chas. H. Lilly Co	Seattle
PORTO RICO	Fritze, Lundt & Co. S	Ponce
ENGLAND	E. H. Taylor	Welwyn

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., SEPTEMBER, 1915

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EDITORIAL COMMENTS

Does the Queen Convey European Foulbrood?

Among the questions sent me for reply came one asking how the queen conveys European foulbrood, and referring to something said by the Editor in the May number. On referring to that number I find on page 173, in a foot-note, this closing sentence: "It very probably would be insufficient in cases of European foulbrood, since this is usually transmitted by the queen." It is marked with pencil, showing that I intended to have something to say about it, but through press of other matters it escaped attention.

Like enough, if I were to meet in person the much respected Editor-in-chief of the American Bee Journal, I would ask, "How do you know?" As that is a pleasure I'm not likely to come within a hundred miles of for some time, I must use more diplomatic language, so I'll not ask that question. I may say, however, without fear of violating the proprieties, that we are none too well informed as to the actual manner in which European foulbrood is conveyed. To be sure, a few years ago a theory was evolved—perhaps I better not try to appear modest and say it was a theory of my own evolving—to account for the manner in which the disease is ordinarily continued in a diseased colony. That theory is that when a larva becomes diseased and dies, before it becomes at all putrid the nurse bees suck its juices and feed them to healthy larvæ, which in their turn become diseased. To be sure, this is on a theory, but no one has yet challenged its correctness, and it serves well as a basis to account for the dequeening method of the cure of European foulbrood.

But this has reference only to the continuance of the disease after it has once made its entrance into a colony. How does it make that entrance? What's the beginning? Promptly a number of hands will be up, and the answer will be, "Through the honey of a diseased colony." I don't *know* that that's the wrong answer, but I'm not so dreadfully certain that it's the right one. Pretty certainly the first entrance into an apiary is through the visit of some of the bees to a diseased colony in another apiary, said visit being made for robbing.

Right here it may not be out of place to say that if there were some way by which none but capable beekeepers were allowed, there would seldom be any chance for the disease to pass from one apiary to another, for a capable beekeeper seldom allows robbing to occur.

Once introduced into an apiary, it may be spread through robbing. Likely, however, that way of spreading occurs in only a small proportion of cases. Too often it is spread by the beekeeper himself taking brood from one colony for another. It is possible that bees from a diseased colony sometimes enter the wrong hive and carry the disease with them. That does not seem so very probable when we consider that the Baldridge treatment of American foulbrood is based on the idea that bees leaving the hive go empty, and so would not be likely to carry diseased matter with them. Of the six cases of European foulbrood that occurred in a mild form in my apiary this season, four were in adjacent colonies. June 22, a few bad cells were found in No. 93 and in No. 94. July 1, No. 95 was found affected, to be followed by No. 96 July 21. That gives color to the belief that bees may have by mistake entered wrong hives, yet it does not absolutely follow that they carried the disease in their honey-sacs. Which raises the deeper question as to just how bees carry the disease from one hive to another.

The general belief is that it is carried in the honey. Maybe so generally, maybe not always. It is not hard to believe that honey may be taken from an infected colony without disease going with it. I have fed honey from the super of a diseased colony without harm following, and it is not hard to believe that unaffected honey may also be in the brood-chamber of a diseased colony. It is possible that even where honey is taken without any disease in it, the germs may be carried on the feet of the robbing bees, and also that a bee entering the wrong hive by mistake might thus carry the germs, even with an empty honey-sac.

But this is too much in the nature of guessing, and it is much to be desired that we should have more definite knowledge. If the disease is transmitted by the queen, that can hardly have reference to its being carried from one hive to another. That it is usually transmitted by the queen after being once introduced into a colony is, I think, somewhat new, but that does not prove it is not true. C. C. M.

The Editor-in-chief will readily acknowledge his own information is only at second hand while that of Dr. Miller is of a protracted nature at first hand. However, the opinion that European foulbrood is "usually transmitted by the queen" was created by two facts, as follows:

Cheshire, in his "Bees and Beekeeping," 2d volume, page 548, gives an account of the dissection of a queen from a colony suffering with foulbrood. He writes:

"The queen was alive at her arrival, and I forthwith began a dissection. Having removed the left air-sac, which lies within the first and second abdominal rings, and which was very much above the average size—a constant indication of the presence of bacilli—I came upon the ovary, of which I had previously removed many dozens. This one was abnormally yellow, and very soft, so that it was difficult to detach it from the larger external tracheæ without tearing; but a separated ovarian tube, placed under a second microscope, magnifying 250 diameters, at once showed four or five bacilli, swimming along with a lazy sort of progression. Detaching now a half-developed egg, and crushing it flat, nine bacilli were quickly counted. This was not an isolated case."

It is true that Cheshire had not differentiated between the two kinds of foulbrood. So we might ask whether this was American foulbrood or European foulbrood. But it is well-known that in thousands of cases of American foulbrood the queen has never been known to transmit the disease. Now let us refer to the April number of the American Bee Journal, page 128. My son, M. G. Dadant, reports experiments upon an apiary in which 51 colonies were treated for European foulbrood. "In three cases, very prolific queens from diseased colonies were given to healthy weak colonies, either queenless or in which the poorer queen had been killed. Every one developed European foulbrood."

This introducing of queens from diseased colonies was done at my suggestion, because of Cheshire's statements, and also because it has been shown that in some cases the supplying of a healthy queen is sufficient to arrest the disease.

However, I am very free to admit that it is very probable that Dr. Miller is right in his contention that "when a larva becomes diseased and dies, before it becomes at all putrid the nurse bees suck its juices and feed them to healthy larvæ, which in their turn become diseased."

We are very much in the dark yet concerning all these matters, and we must keep on theorizing until some one discovers the exact facts and just how much there is in either the queens, the brood, the combs or the honey, in the transmission of disease. But it already looks very probable that there is no danger lurking in the honey with European foulbrood, while it is principally there with American foulbrood. Queens need not be changed in American foulbrood, but their removal is often necessary in European foulbrood.

We keep our columns open for further discussion of all these points.

C. P. D.

Managing Straw Skeps for a Crop in Modern Frames

A French lady beekeeper of considerable experience, Madeleine Maraval, tells in the "Abeille Bourguignonne" of August, how she succeeds in getting the honey crop of her colonies in straw skeps stored in movable-frame hives. She owns colonies in both skeps and movable frames. She proceeds as follows:

"My aim is not to increase the number of colonies, but to secure as much honey as possible. During April, after the spring visit I begin to move each of the colonies in straw skeps in the direction of a good colony in movable-frame hive, a little, each evening, after the flight. In this way each well developed colony on frames has near it, after awhile, a straw skep, with the entrances as close together as possible.

"At the opening of the honey crop we are ready for the juggle. I proceed with it as soon as the skeps are found heavy enough to be safe, by removing each skep to a new spot, in the middle of the day, when the big crop is on. There is a great flurry among the poor honey gatherers when they come back heavily loaded and fail to find their home in its place. But the flutter is of short duration; the neighbors are very accessible to those who come loaded. There is hardly a half hour of excitement and the adoption is consummated to the benefit of the movable-frame hive which thus doubles the number of its field workers and trebles its crop.

"As for the straw-skep colony, the only thing expected of it is to gather sufficient stores to live until the next year, when it will be made to *sulk* again."

Smell Organs of Coleoptera

We are in receipt of a study on the "Olfactory Sense of Coleoptera," by N. E. McIndoo, of the Bureau of Entomology of Washington, D. C. This work was published by the "Biological Bulletin" in June. Mr. McIndoo is the scientist who wrote an article on "The Sense of Smell of the Honey Bee" in the American Bee Journal of June, 1914. His conclusions in the present study are the same as those reached by him before, that the sense of smell is not located in the antennæ of insects

AN APIARY IN WILLOW SKEPS WITH STRAW ROOFS IN THE HEATHER DISTRICT OF SOUTHERN FRANCE.

as generally believed, but in smelling pores located at the base of the wings, legs and other parts of the body. The scientific and thorough manner in which Mr. McIndoo's experiments, anatomical studies and statements are made entitle him to serious consideration, even though it may compel the radical change above mentioned in the accepted views of entomologists.

Our Own Crop

As stated in some of our previous numbers, the season of 1914 was the poorest one we have had in all of our beekeeping experience. Bees went into winter quarters in a very weakened condition, although we fed our 500 colonies something over 7000 pounds of granulated sugar, made into syrup. In spite of the fact that we wintered out-of-doors, and that about 75 percent of the colonies covered but six to seven brood-frames, our winter losses were considerably less than 10 percent.

The spring of 1915 opened up early, and pollen came in freely, so that the bees built up very rapidly until fruit bloom began. Although they were weak in numbers during fruit bloom, they gathered quite a quantity of honey, so that very weak colonies built up to good strength by the time fruit bloom was well over. Then came two months of the worst weather we have ever experienced. Rain and cold continuously, and as the colonies were strong their stores ran out a few days after the apple bloom ceased. Had we not given them plenty of help in the way of feed, we would no doubt have lost 50 percent during the months of May and June.

Sweet clover began to yield here about June 20 to 25, and the bees took a new lease on life. Brood-rearing began again, and colonies that were at the point of starvation soon began storing honey in good earnest. There was no white clover.

The summer rains have prevented farmers from working in their cornfields, and every cornfield in the neighborhood is literally covered with heartsease or persicarias, and there will later be a heavy bloom of Spanish-needle. At the present writing (Aug. 17) bees are making rapid headway, and our colonies average not less than two supers per colony, with a prospect of three or four weeks of flow ahead of them. Just now, we are very busy with the seven apiaries, keeping ahead of the honey flow; but luckily, we have plenty of empty combs, so that it is little trouble to keep down swarming. To date, we have had, to our knowledge, about seven swarms from the 550 colonies, and this without depending upon any method of keeping down swarming except raising the hives from the bottom-board in front and keeping plenty of room above.

Of course, a cold wet fall would ruin our prospects, which are so bright, but we are hoping for good warm weather and a late frost, with occasional rains to keep the bloom coming in good shape. Prospects for next season are immense, when looked at from this angle. The ground is covered with young clover, which should give us plenty of bloom; in fact, more white clover bloom than we have had for eight or ten years past.

Accident to J. E. Pleasants

Through a California paper sent by one of our subscribers, we learn of a painful injury to our California department editor, Mr. J. E. Pleasants. The article reads as follows:

> Santa Ana, Aug. 14.—Trampled and gored by an angry bull, J. E. Pleasants, 77-year-old bee inspector, was saved from death today by the daring of his wife, who fought off the enraged animal with a pitchfork.
>
> The attack occurred at Pleasants' ranch in the Santiago canyon, and took the aged inspector by surprise. Mr. Pleasants was struck forcibly from behind, knocked to the ground and was being gored and trampled when Mrs. Pleasants ran from the house.
>
> Crying to her husband to be cool, Mrs. Pleasants snatched up a heavy pitchfork and attacked the bull. Time and time again the sharp forks entered the animal's nose, bringing bellows of rage and renewed attacks on the prostrate man.
>
> Finally Mrs. Pleasants summoned her strength and plunged the weapon into the animal's neck, driving him from her husband, who was found to be fearfully bruised.
>
> The injured man was assisted into the ranch house and given first aid treatment. Later it was announced he would recover.
>
> The bull was ordered killed.

We trust that Mr. Pleasants may recover quickly from his injuries so that he will be able to resume his work with the bees. We happened to have some contributions and pictures from him still on hand, so that the department will appear as usual in this number.

MISCELLANEOUS NEWS ITEMS

Ontario Beekeepers' Association—White Honey Crop Report.—The Crop Report Committee of the Ontario Beekeepers' Association met on Aug. 4. Three hundred members reported from all parts of Ontario, showing an average of 55 pounds per colony. There is about an average crop, and the quality is excellent. The buying power of the public is below the average, however, and it is likely that prices will range slightly lower than those recommended by the committee last year. In fact, some honey has already changed hands at prices recommended below.

Selling should be brisk at these prices, as the market is clear of old honey and the high price of sugar is causing householders to turn to honey as a substitute for canned fruit; considering that it requires no preserving but can be stored in a dry place regardless of temperature without even removing it from the tin. One case was reported where berries were allowed to waste, and 60 pounds of honey purchased to save the expense of picking and canning the berries.

The prices recommended by the committee are as follows:

No. 1. light extracted, wholesale................	10 to .11½	per lb.
No. 1. light extracted, retail........................	.12½ to .15	" "
No. 1. comb, wholesale..	$2.00 to $2.75	per doz.
No. 2, " "	1.50 to 2.00	" "

These prices are f. o. b. in 60 pound, 10 pound, and 5 pound tins; the former being net weight with the tin thrown in, the two latter being gross weight. The difference in time and trouble of filling the small tins about equalizes the price. In selling to the wholesale merchant the lowest wholesale price should be asked; while the retail grocer should pay the highest wholesale price. The retail price to the consumer might vary according to the quantity he takes in any one purchase, and whether he supplies his own package.

Signed by the committee:

Wm. Couse, W. J. Craig,
H. G. Sibbald, Morley Pettit,
Sec.-Treas.

◆

Fox River Valley Beekeepers.—I was at Aurora, Ill., July 28, and had the pleasure of attending the meeting of the Fox River Valley Beekeepers who organized on that date. This bids fair to be one of the best, if not the best and largest beekeepers' association in the State outside of the Illinois Beekeepers' association. There are many beekeepers in the valley.

American foulbrood has made its appearance for some time in this valley and the beekeepers have made up their minds to get rid of it. I spent the greater part of the week among them inspecting and instructing. They expect to meet every two or three weeks during the fall and winter to post themselves and to gather together as many members as possible.

My bulletins are at last printed and will be forwarded as requested. The bees have been working quite well since July 1. Basswood gave them a little start and sweet clover is holding on well. The rains are making the prospect good for a fall flow of honey.

Putnam, Ill., Aug. 2. A. L. Kildow.

◆

Demonstration at Minnesota Fair.—Fifteen tons of honey from the apiary of Emil Hoffman, of Janesville, Minn., owner of 700 colonies and one of the largest apiary establishments in the northwest, are to be used in a novel extracting demonstation at the Minnesota State Fair Sept. 6 to 11, as a result of arrangements just perfected by P. J. Doll, of Minneapolis, superintendent of the apiary department.

The demonstration will be conducted in the Apiary Building during the entire week of the fair. Its purpose will be to show the public how honey is handled on its way from the hive to the table, and give the 50,000 bee fanciers of the northwest an opportunity to study latest methods. Students from the Minnesota Agricultural College, specializing in bee culture, will do the work. Each day the students will be under the supervision of a different bee specialist of established reputation.

The exhibit of honey at the fair this year will be twice as large as any preceding one. All exhibit space has been taken, and applications for space have been turned down for nearly two months. This extraordinary interest is due not only to the rapid growth of the bee industry in the northwest, but to the large crop of honey that is being harvested.

Early in June it was believed that the almost continuous rainy weather would seriously interfere with the honey harvest. Along with it, however, there was a lateness of season that tided the bloom over into late July and August, after it had commenced to clear up, and an enormous crop resulted for the most part.

The Apiary Building has been remodeled throughout to handle the big exhibit anticipated. At the present time it is in better shape than it has ever been, and located as it is it is one of the most popular parts of the vast Exposition Grounds of 350 acres, and is certain to attract much attention this fall.

◆

Last Call for the Field Meet at Hamilton.—Don't forget the dates of the two big summer meetings of bee-keepers of the middle West. On Sept. 7, will be held the joint meeting of the beekeepers of Iowa, Illinois and Missouri at the Dadant apiaries at Hamilton, Ill. You will meet many of the prominent beekeepers of the country, see the Dadant foundation factory and their large apiaries.

You will be shown the big dam across the Mississippi river, which is one of the biggest engineering enterprises of the century. Above all you will combine a summer vacation with profitable discussion of the latest phases of beekeeping.

On Sept. 8, at Keokuk, Iowa, will be held the conference of bee inspectors where problems of bee disease and their control will be discussed by the men whose business it is to use every means to control the spread of foulbrood.

Two big meetings coming together, a visit to the Dadant apiaries and the big dam offer a combination of attractions that should be hard for a beekeeper to resist. We expect a good attendance and a splendid time. Don't forget the dates, Sept. 7 and 8.

Frank C. Pellett.

[The beekeepers who intend to attend the Hamilton field meet are requested to inform the American Bee Journal or Dadant & Sons by postal card in order that we may make proper arrangements to entertain them, as the Dadant apiary is over 2 miles from the railroad station.]

◆

Polk County, Iowa, Field Meet.—On July 14, at the home of Mr. Harris, about a mile north of Des Moines, was held the second field meeting of the Polk County Beekeepers' Association.

The morning was occupied by a general discussion, and at 12:30 p.m. the tables were spread for the large gathering. Following the dinner a short program was given. Prof. Pammel, of Ames, discusssed the "Honey Plants of Iowa," and Prof. Bartholomew also gave an interesting talk. Mr. Slinker, of Des Moines, talked on

Polk Co. Beekeepers Picnic 1915
DAVIS, AMES

THE GROUP IN ATTENDANCE AT THE POLK COUNTY PICNIC

"The Shaking Treatment for Swarm Control." D. A. Davis,
Deputy State Inspector.

Something to Do.—"What has become of the Cheerful Idiot?" asked the Old Fogy. "I haven't heard of him for months." "Why, he is busy with a get-rich-quick scheme," replied the Grouch. "What is it?" asked the Old Fogy. "Some one told him that a queen bee lays 3000 eggs a day, and he is trying to perfect a cross between a queen bee and a hen."—*Cincinnati Enquirer.*

The Ohio Field Meet.—The Ohio Beekeepers' Association held its second field meeting at the apiaries of Fred Leininger & Son and J. H. Allemier, of Delphos, Aug. 4, 1915. The first field meeting of the association was a two-day meet at Medina, Ohio, last summer.

Inclement weather on the previous days and threatening weather on the day of the meet reduced the attendance. In spite of the weather about 150 attended.

At the home apiary of Mr. Leininger, demonstrations in queen-rearing were made and general manipulations carried out.

After dinner the visitors were taken to one of the out-yards where the general manipulations and the processes of queen-rearing were repeated. Live bee demonstrations, consisting of filling hats with bees, shaking bees over their heads and placing them in their mouths, were given by D. H. Morris, of Springfield, one of the Deputy State Inspectors, and by A. A. Doenges, of Defiance.

During the whole day, as chilly as it was, everybody walked freely among the bees and not a veil was to be seen.

At the same yard a talk was given by Mr. E. R. Root, of Medina, on "Live Bee Demonstrations," "Sweet Clover," "Wintering Bees," and "This Season's Honey Crop." Mr. Root believes one of the coming ways of wintering bees is in tenement winter cases. Mr. A. C. Ames, a State Inspector of Peninsula, gave a talk on the tenement winter case.

Mr. F. L. Webster, a prominent banker of Van Wert, gave a talk on sweet clover as a forage crop. In his talk Mr. Webster stated that a man in his vicinity pastured 65 head of cattle on 20 acres of white sweet clover last season, and sold them with a net profit of $970. This year the farmer is going to harvest the seed and expects to receive a nice return from it. He said the farmers in that vicinity are planting large acreages of it now.

A panoramic picture was taken of the beekeepers at this yard, after which they returned to the apiary of Mr. Allemier. Here they listened to an interesting talk by F. W. Summerfield, of Toledo, on his experiences at moving bees to Florida during the winter and back in the spring.

Mr. Root said that those who wanted to keep bees should not leave Ohio, especially the northwestern part of the State.

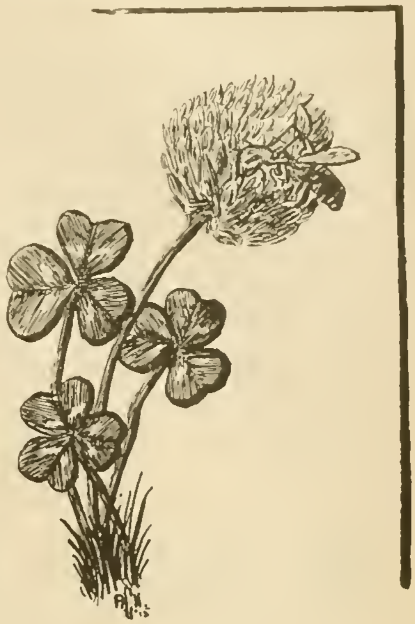
At the close of the meet a vote was taken which was unanimous in commending the work of N. E. Shaw, State Entomologist as head of the inspection in the State.

It is the intention of the association to hold a greater number of field meets each year in various parts of the State as time goes by. The association is preparing an exhibit for the State Fair, at which will be given out a list of all paid up members and their addresses, and if any have honey for sale this will be indicated together with the quantity and kind. E. R. King, *Sec.*

Creola, Ohio.

National Beekeepers of New Zealand.—In New Zealand they are pushing to get a market, and it is noticeable that a good share of the changes proposed in their constitution at their last meeting, held recently, have to do with the marketing end of the business.

Some of the changes proposed are, to create a defence fund for the protection of members, to act in conjunction with the Cooperative Honey Producers' Association to get a better price for honey, to urge that the registration of apiaries be brought into force as soon as possible, and to insist that honey be carried on the railroads at the same rate as butter.



A Bee Caught by a Spider Smaller than Itself
Courtesy of Dr. A. J. Hocking.
Crystal Falls, Mich.

THE CHILDREN AT THE POLK COUNTY PICNIC

We find the familiar name of our old friend Isaac Hopkins on the program.

Yakima Valley Pioneer Dies.—Legh Richmond Freeman, editor of Freeman's Farmer for years and one of the pioneer beekeepers of the Yakima Valley of Washington, died at North Yakima on Feb. 8, 1915.

Mr. Freeman has the distinction of having brought into the Yakima Valley the first colony of bees in a movable-frame Langstroth hive. It was he who first advocated the organization of the Washington State Beekeepers' Association, and it was partly due to the publicity which he gave this association that it so early took rank as one of the leading beekeeping associations of the country.

New Jersey Field Meeting.—The New Jersey Beekeepers' Association will hold a field meeting in the apiary of R. D. Barclay, of Riverton, on Sept, 16, when live topics will be discussed.
E. G. Carr, *Sec.-Treas.*
H. Root, *Pres.*

Who Owns the Bees?—A Legal Question.—Last Thursday, July 15, a swarm of bees escaped from Chris Anderson's apiary. Dave Reese saw them flying over Mr. Dickinson's lot and threw dirt among them, which so confused them that they alighted on an apple tree on the lot where C. L. Dersch lives, on a limb that hung over on the Dickinson lot. R. L. Joiner hived them in a hive furnished by Judge Jenks, on the Jenks lot. They are now gathering honey from all lots in town, and from Woodbury's pasture. The question is who owns the bees, and who is entitled to a share in the honey that they gather? Judge Jenks claims that Reese is out of it because he went off and left them. That Dersch is disqualified as claimant because the limb hung over the Dickinson line. That Joiner has no claim because he brought them over on his lot. That Anderson did not follow them, and any one had a right to reduce them to his possession.

All the other interested parties claim that the Judge is an interested party, and, therefore, has no jurisdiction in the case. When Judge Thompson gets home from his furlough, the question will be submitted to him, and as the question is a knotty one, it is likely the honey will be all gone by the time he renders a decision.

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Illinois Field Meets. — Immediately following the field meet at Hamilton on Sept. 7, there will be one at Rockford, Ill., on Sept. 10. Among others, State Inspector Kildow, President Baxter, and a member of the American Bee Journal staff are expecting to attend. All beekeepers who can arrange to do so are urged to attend.

Plans are being formulated for a field meet at St. Anne, Ill, on Sept. 15.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

A Beginner

I am sending a picture of me taken a few days ago, holding a frame of brood and bees. Mr. Moore and I are very much interested in bees. The picture was taken one afternoon when my husband and some of his beekeeping friends were holding a bee convention in the backyard. We were examining a colony to look at the brood.

We live in the city and do not have very much room for them, but none of the neighbors or myself have been stung as yet.

We are having plenty of rain and look for a good fall crop of honey. I am very anxious for the time to come when I have the privilege to sell my first section of honey.

[Mrs] Anna L. Moore.

Decatur, Ill.

Anna L. Moore Examining One of Her Colonies

You will probably find that people will prefer your honey to any shipped from a distance no matter how good that may be, at least it is so in this locality, and of course you will be interested in the bees if you are to have the money for the honey.

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The Stingless Bee

BY CELIA BALDWIN WHITEHEAD.

Of honey I am very fond;
I'd like to keep some bees
To gather honey all the day
From off my flowers and trees.

I'd love to see them spread their wax
And skillful build each cell,
And labor hard to fill them up
With what I love so well.

But bees have stings, and I'm afraid
To venture near a hive;
If I should get amongst a swarm,
I'd ne'er get out alive.

But nowadays we've many things
With "less" attached thereto,
We've fireless cookers, hornless cows
And boneless codfish, too.

The wireless telegraph reports
The cryless babe enroute,
The iceless soda fountains flow
And hoseless wagons toot.

The seedless orange grows apace,
The thornless roses bloom,
The headless ballot prophesies
The grafters graftless doom.

The painless dentist pulls our teeth,
With flourless bread we're filled,
We're carved with knifeless surgery
With smokeless powder killed.

With all these lessons in the art
Of making thingless things,
Why can't our geniuses produce
Some bees that have no stings?

What joy I'd take to walk about
Beneath my shady trees,
And gather in the luscious sweets,
Produced by stingless bees

Denver, Colo.

CALIFORNIA BEE-KEEPING

Conducted by J E. Pleasants, Orange, Calif.

Keeping Bees

Perhaps nothing is a source of more entertainment to one's guests than opening up a hive of bees when they can be convinced there is little danger of being stung. We have a few hives in the garden near the house, with the hollyhock background, so picturesquely suggested by Mrs. Comstock in her "How to Keep Bees." These have become quite docile from association and frequent handling, and serve as a source of interest and amusement to many comers. The great desire is always to see the queen.

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European Foulbrood

We have had an epidemic of European foulbrood in our county this year, in spite of our efforts to keep it out. That, of course, has had something to do with our light crop. Now that the honey flow is drawing to a close and we are getting our bees in shape for the fall, just a word to the beekeepers of infected apiaries.

The disease has disappeared to a great extent during the honey flow. But do not be misled by this. It will appear again in the winter. Almost sure to unless you have requeened with good young queens. So, if you have not done so, now is a good time to safeguard your apiary by requeening as thoroughly as possible with good young Italian queens. While it is not claimed that Italians are entirely resistant, I think the experience of all bears out the theory that this is uniformly the most resistant race, and I believe now the preference is being given the leather colored.

All who are in doubt should read Mr. Pettit's articles in the American Bee Journal on experiments with diferent races. Of course, good strong colonies of any race may be resistant, but unless one has the time and opportunity for personal experiments it is well to heed our leaders in the profession who have. They are giving their labor and time for the benefit of all, and may save us much valuable time. It is a good time to get queens now if done at once, as they are cheaper than early in the season.

Auto Trucks for Honey

Perhaps no State in the Union uses more automobiles than California. In fact, some think we run to extremes here in that line. Auto trucks are now used a great deal for moving both honey and bees. While I am a great lover of the horse, and do not like to see them altogether replaced by machines for pleasure driving or even draft work, it seems to me that this is a line of work in which the machine especially shines. The distances are usually great from out-apiaries to market, also the rapidity with which bees can be moved from one locality to another is of course a great advantage. One must have a reliable machine, a careful driver, and a heavy load, however, to make everything go satisfactorily.

The snapshots of truck load of our honey on its way to market shows a characteristic California scene during the honey harvest. The auto truck never gets stung, though the driver may on some of our mountain roads.

SHOWING THE QUEEN TO THE VISITORS

BEE-KEEPING IN DIXIE

Conducted by J. J. Wilder, Cordele, Ga.

A Trip Over the Business

It is the greatest desire of many of those who have joined our ranks as beekeepers to bring their business up to a point where they may be numbered with those who succeed and take a peep at life on its pleasure side. Leaving luxury out, I have reached such a point and know how one feels when he can count his colonies by the thousands. It is not so much being comfortably situated in life and having a bank account as having good business relations who love the business as I do and take interest in it. They are just as eager for improvements as I am when it comes to increasing the number of colonies.

The honey crop or prospect of one is a matter of importance to us. All the time spent at an apiary is taken up. Every member of the family is glad to see us and do everything for our pleasure and comfort they can, which makes the time spent at each place a source of great pleasure. There is nothing better in life than pleasant business relations to the enterprising or progressive business man.

On Aug. 1, I left my summer cottage up in the mountains for a hurried trip over my business, beginning at Cordele, Ga., and ending at Ft. White, Fla., which are the extreme points of my business and 200 miles apart. Between these two branches I have five other apiaries, and the main sources of honey differ at each one and come at different seasons of the year, from March 1 to Nov. 15. In some places the main flow was over and the honey was all off and shipped, but at these places there was just a little nectar and pollen coming in, and the apiarist was busy requeening. In some places the flow was just coming on and the apiarist was busy supering and doing general apiary work. In other places the flow was passing off, and hauling and packing honey was the order of the day. At some places I found the apiarist off on a vacation, and at other places I found him on the banks of a near-by stream fishing and having a good time. At other places they were getting up and going to work at 3 o'clock in the morning.

Well, it was a great trip which I enjoyed, and the more, too, when I found the business everywhere in the very best condition. I am exceedingly proud of my business, as every one should be who has found his natural calling and is following it.

Wants to Come Back to Dear Old Georgia

"Mr. Wilder:—I am going to try to get back to my old home country (Georgia) this fall and beekeeping is my aim. I want to ask you which portion of the State is preferable for this purpose, the southern or northern? Any information will be appreciated. I have been here in Wood Co., Tex., for a number of years."

Quitman, Tex. W. M. Blackwell

Mr. Blackwell, doubtless you are not aware that I also wish to return and roam over some of the old ground of my boyhood days, and I wish we could just exchange places for awhile, for I spent my boyhood in great Texas; yes, and in Wood county at that. We first got interested in bee culture in your county, and established our first apiary there and contracted a "bee fever" that will last through life.

Southern Georgia is a level country, and some of it is what we would call low, so much so that it is worthless for agricultural purposes, being covered frequently with water, and in many places it is malarious, and no one can live there and enjoy good health; chills and fevers soon overtake one, and he will lose all energy. In many such places beekeeping would pay well, and perhaps better than elsewhere in Dixie. but to live there and enjoy good health is impossible. The higher and better settled portions of south Georgia are not quite so good for beekeeping, but health is better.

By knowing the country and the various honey plants, one can pick out a choice location and do well in beekeeping, if it is properly followed. But as a rule a new comer into our territory meets with failure. quits bee-keeping and follows something else or pulls up and moves away. This has so often occurred that we dare not advise any one to move into our country and engage solely in beekeeping.

While I have succeeded very well here, it was done under very trying circumstances, such as not many would care to come under. The same thing might be said of the northern portion, but the general health of the people is far better for side lines, such as poultry, fruit growing, trucking, stock raising, etc., which are most desirable for side issues to our line of business; while at the same time beekeeping can be carried on there as a sole business successfully if properly managed and enough property invested in it.

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Something About Sections

For a number of years we have been using all the regular sized sections as sent out by our manufacturers, namely, 4¼x1½, 3⅝x5x1½, 4x5x1⅜ plain, and 4¼x1⅞—2 beeway in the comb-honey part of our business, and we have kept close watch of results in point of production and marketing, and it has been our experience that we can get more plain sections filled than beeway, and just a little more honey stored, all told, net weight, but the bad feature (especially since the net weight law came about) is that they are not so well filled; the comb is not nearly so well attached to the sides of the sections, and it is "pulled" away from the wood and they do not make good shippers. They look "scant" to the consumer, and they do not sell as well; in fact, there is no sale for them on certain markets.

The leading object in putting out a "tall" section was to "stretch" the contents out and make it appear larger and more attractive to the buyer, but in this it has been a failure. Besides here, where comb honey is subject to the ravages of the lesser moth from the time it is removed until it is consumed, it is almost impossible to keep it for any length of time, and it must be consumed in a short time after removal. The comb surfaces come so close together after it is packed that it makes a good harboring place for the lesser moths, which make many passages between the sections of honey and plow up the cappings until they are soiled, and in most cases the honey will ooze out. Such is not the case with the beeway section. Then, too, the surface is not so well protected from handling and wrapping as in the beeway. So there is no style or size so good as the regular standard beeway 4¼ open top and bottom section.

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Requeening

It is surprising to know how fast beekeepers for the last few years have learned the importance of requeening their bees. Queen breeders, as a rule, are overrun with orders most of the time, so much so that they cannot be prompt in filling orders, and dissatisfaction arises from time to time among those who have to buy queens.

Notwithstanding there are many more queen breeders in the field than formerly, and those all the time greatly equipping and increasing the output of their business. The beekeeper who has never tried requeening may entertain a doubt as to whether it pays, and may refrain from doing so. There is no doubt about its paying, and the opportune time to do it is before winter. A colony with an old queen in the fall is drifting towards a weakling or worthless colony for next spring, simply because the queen has passed the best period of her usefulness and fails to lay eggs sufficiently to keep up the colony. Take her out and introduce a young one and note in a short while the change in the activity and strength of the colony; the brood-nest has been greatly widened out and the field force greatly strengthened. Pollen and nectar from fall flowers are coming in, and the colony gets into good wintering condition, and will gather a honey crop next spring. So returns from investments in good queens begin at once and continue for two years, as a rule. This is a good investment. Try it on the weak colonies in your apiary or those which seem to be drifting downward, and in this way make of them your very best colonies. Change your stock if you are not pleased with what you have and are not reaping good results. The good queen-breeder will stand back of the stock he sends out and will make good your losses so far as stock is concerned.

LOADING THE TRUCK

CANADIAN BEEDOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

Confusion in Names

We often hear that beekeeping and poultry keeping combine nicely as a business, but it has remained for Mr. Pettit, our provincial apiarist, to bring this combination to a fine art.

A Mr. Inglis, from Rainy River, asks in the August number of the Canadian Beekeeper, how to control swarming, and also states that in the north country comb-honey production is not profitable. After giving Mr. Inglis some pointers on swarm control, Mr. Pettit has this to say about comb honey production in northern localities: "The trouble with comb-honey production where there are cool nights, is that the supers cool off so that the *hens* have difficulty in working the wax." The first thing Mr. Pettit knows he will be deluged with letters from poultrymen, offering stock guaranteed to work in any country no matter whether nights are cool or hot.

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A Short Cut

As one grows older in apiary work, short cuts will be taken advantage of that, in earlier days, would not have been thought of. For instance, yesterday while at one of the out-yards I thought it better to examine a number of colonies to see whether young queens that had been hatched were laying. As I was about to lift off the super of the first of these colonies, I happened to think that for about ten days not a bit of nectar had been gathered, and for this reason probably the drones might be having a hard time of it in colonies where a young fertile queen was established. Sure enough on looking at the entrance a bunch of drones probably 20 in number, were hugged up at one corner of the hive.

No use to examine that hive, for that was *prima facie* evidence that there was a fertilized queen inside. The same examination showed like conditions at other hives, and I was thus saved a lot of work at a time when bees were none too nice to work with. This test is a good one for fall, if one has not the time to examine all colonies now, as after the honey flow is all over and cool weather comes along, it is a pretty sure sign that something is wrong if any great number of drones are still

A THREE-TON LOAD

tolerated in a hive.

Crop Conditions

Ontario has a fair crop of white honey with prospects good for a medium crop from buckwheat if we get some fine warm weather soon. There are many acres of buckwheat with too much rain at present. Basswood yielded well in some places and little in others, although the bloom was abundant and weather seemingly perfect.

In our locality it gave a spurt for three or four days, and we have more basswood honey than we have had for eight years. In the north yard we thought all buds were frozen by late spring frosts, but we found that the tops of the trees were all right, and that on ridges a mile or more from the yard the buds also escaped. As a result, we got a nice flow from that source which helped to round the crop out nicely.

Sales seem to be fairly good despite war conditions, and many have sold their entire crop at a fair figure. Bees are in good condition at present and should go into winter quarters in fine shape if we get a flow from buckwheat.

Much Rain—Good Prospects

These notes are being written on Aug. 11. For ten days previous to this date many parts of Ontario, including our own district, have been visited by torrential rains that have done great damage to farming and more or less to beekeeping. Everywhere the ground is soaked like in early spring and streams are at high flood. All this excessive moisture, while doing damage for the present, undoubtedly means lots of clover for next year.

Alsike and White Clover

On page 273, Frank C. Pellett in describing the two plants, alsike and white clover, hardly does justice to the first named clover, if our locality is to be taken as a criterion for the clover sections in general. He rightly says that alsike probably yields as regularly as any honey plant, but he says nothing as to the quality of the honey. In the next paragraph he says that the honey from white clover is generally considered the finest honey that goes to the market, and that it always brings the highest price. If there is any difference in favor of white clover honey as compared with alsike, we have yet to notice it here, and as a general rule the alsike is far more dependable for a crop than is white clover.

As we have said before, the majority of locations in Ontario that are now fair, would be very poor places for extensive beekeeping if all our alsike should disappear and we had to depend upon white clover alone. White clover is a splendid honey plant, but for Ontario at least alsike is still better, and the honey from it is at least as good as white clover honey, and that means that it is good enough for the most fastidious sampler.

Sweet Clover for Honey

With more or less skepticism I note Mr. Pellett says that sweet clover, "being one of the surest plants to yield nectar, the man within its reach will seldom face a failure." Judging by recent reports from Kentucky, where there is such a large acreage of sweet clover, it looks as though it quite often fails to yield bountifully. There is something about sweet clover, be it odor or another factor, that makes the plants very attractive to bees, but I maintain that, as a rule, it is a very slow yielder of nectar.

On the outskirts of Toronto there are hundreds of acres of sweet clover, yet after the white and alsike clovers are gone, although the sweet clover is yet blooming profusely, very little surplus is stored. I have noticed this several years, and have often interrogated beekeepers in this district. I have yet to hear of much of a yield from sweet clover. Some of them tell me that it keeps the bees out of mischief and is good to encourage late brood-rearing, but as a surplus yielder it has never done much up here.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Indications of a Flow

The outside indications of a good honey flow are not so easily determined as one might think. Can one tell a fast flow from a slow one by outside indications? By careful watching I think it is possible. The manner in which the home-coming bees alight at the entrance is one of the best criterions. The speed with which outgoing bees take flight is another one; the outgoing bees seem to be in a hurry to get somewhere. The general flying of the bees in the apiary will indicate somewhat of the character of the flow. If the apiary has the fragrant odor of the alfalfa or sweet clover bloom this has a significance. In a slow flow I have never noticed the odor of the nectar-bearing flowers in the apiary.

The manner in which the bees work upon the bloom also means something. When sweet clover is very fragrant and the bees are not too thick upon the blossoms, the indications point to a good flow. When sweet clover bloom is literally swarming with bees, it indicates a shortage of bloom for the colonies in the district. Alfalfa is never seen swarming with bees, but the presence of bees apparently working leisurely upon the blossoms is a good sign.

Use of Honey in Cooking Tested by Agricultural Colleges

The use of honey in cooking is going to receive a stimulus in Colorado very soon. Over a large part of the State honey is now cheaper than sugar, and its superiority for baking and preserving fruit is being found out more and more. It is important that the limitations of honey for this purpose should be thoroughly understood so that disappointment will not result.

As a general proposition dark strong honey can be used for baking purposes. For preserving fruit the fruit flavor is desired, and a mild flavored honey should be used. By keeping these in mind the housewife will have good results from the use of honey.

A honey can specially adapted to contain the cooking and preserving honey, should not be larger than two-gallon capacity, and should have a large opening sufficiently large so that the honey may be either poured out or dipped out with a large spoon. A wood-jacketed can may be sent by parcel post, and with a large round screw cap is admirable for cooking and preserving honey.

If our darker grades of honey can be put up and disposed of as cooking honey, we can find a market that has not been open to us heretofore. This will also help keep inferior honey off the market as a table article, where it is an injury to the trade. Let us have some "cooking honey" and "preserving honey" labels gotten out and begin a little publicity along this line.

The Home Economics department of the Colorado Agricultural College have taken up this subject of the use of honey in cooking and preserving, and when the ladies in charge have tested out the use of honey sufficiently we expect the results to be taken direct to the people through the Extension Department and the County Agriculturists. Perhaps yet Colorado will develop the home market to the extent that our product will be mostly consumed within our borders.

Honey Harvest and Prices

Weather has been reported cool in Idaho early in August, and apparently the flow has about ended there with a fair yield. The Colorado crop has not yet been secured, but some honey is being taken off, and if the flow lasts through August we can get a little surplus yet.

The season still continues to be about one month late, and with a late fall the late swarms will fill their hives. Swarming has not amounted to much this year, the increase will not make up for the last winter's loss in most localities.

Honey is in better demand locally than common, especially extracted honey. Comb honey is selling at $3.50 to $4.00 a case direct to the retail grocers, but this price will drop as soon as a larger amount of honey is taken off. Extracted honey retails at 10 to 12½ cents, and wholesales at 8⅔ to 9 cents. As soon as more extracting is done the price will hardly go above 8¾ cents in a wholesale way.

CONTRIBUTED ARTICLES

Sweet Clover

BY J. E. CRANE.

THERE has been a gradual decrease in the honey-producing flowers of our northern and northeastern States during the past 50 years. There is doubtless more honey produced than 50 years ago, but it is owing to the greater intelligence and enterprise of beekeepers, rather than the greater supply of honey-yielding flowers. The destruction of our basswood forests by lumbermen has set us to thinking as to whether, if other sources fail, we may not be driven out of business. Had not alsike clover been introduced some 50 years ago, I fear many of us would already be out of business.

The great value of alsike clover leads us to ask if there may not be other plants of value alike to the farmer and beekeeper. Crimson clover has been introduced that is equally valuable to farmer and apiarist, but it is too tender for our severe northern winters. Sainfoin, too, has been introduced, but does not seem to make much headway. Hairy vetch is another candidate for our consideration, but so far does not seem as promising as some others. Buckwheat is helpful in certain localities, and on certain soils, but is a flat failure in others. Alfalfa has proved a great success in the far West, but east of the Mississippi river has, so far failed to yield much nectar.

It is now 45 or 46 years since M. M. Baldridge, of St. Charles, Ill., called the attention of beekeepers through the American Bee Journal, to the value of sweet clover as a honey yielding plant. This was not new, for its value has been recognized for thousands of years. But such a plant was not likely to prove useful unless it could be brought into general cultivation. Of its value for forage for hay and pasture no one seemed to know until quite recently. I wish to call attention to other quatities that commend this plant to all who are interested in its cultivation.

The northern and northeastern States are especially subject to drouth, as well as those of the West. Next to alfalfa, sweet clover can endure drouth, when our old clovers or grasses would be almost a complete failure. Not only can it endure drouth, but with its strong long tap roots it fills the soil with humus, and as they decay it will absorb water like a sponge, and retain it for the use of succeeding crops. The large amount of humus furnished by these roots improves the condition of the soil, fitting it for the growth of future crops.

I met in Florida two years ago a party from Kentucky, who told me that one county in that State, formerly considered the poorest in the State, was now considered one of the best through the free use of sweet clover, so greatly had the mechanical condition of the soil been changed, by the cultivation of this plant. While the seed of sweet clover does not seem to germinate as readily as that of alfalfa, requiring more seed to the acre, the young plants are much hardier. Alfalfa requires a good seed bed and freedom from weeds, grain or grass to get a start, while sweet clover cares little for the hardness of the soil provided it is covered to start with, nor does it mind very much weeds or grain. It will grow in almost any soil which contains a good supply of lime. In fact, it seems to require no other fertilizer.

I believe sweet clover is to play a very important part in subduing certain weeds of very bad character. In many parts of northern New England a weed has come of the most vexatious character. It is worse than useless. It spreads from the roots freely, and by a multitude of seeds that the wind carries everywhere without regard to the wish of the farmer. It is known as paintbrush or hawkweed. This weed has been spreading so rapidly in this

A. ELLIOTT'S APIARY IN LARIMER COUNTY, COLO.

section that I have felt anxious lest it ruin the beekeeping industry.

Imagine my pleasure on being informed recently that a farmer in a nearby town had discovered that sweet clover would run it out, or from its stronger growth smother this pernicious weed.

There is another weed that is doing great damage to the agricultural interests of the country. Almost all plants when out of place are weeds. I refer to witch grass, known also as barnyard grass, quack grass and devil grass. It comes into cultivated fields, making cultivation difficult, and choking grain crops. With modern methods of tillage it spreads rapidly by its strong creeping roots, any joint of which will grow into a new plant. Already I find it crowding out alsike clover, and if it continues to spread as it did of late, it may seriously injure our crops of honey.

There are two or three ways of subduing it. The roots may be dug out or the grass constantly cut off at the surface of the ground by intensive cultivation. I have tried both ways, but they are expensive. Another way is to smother it with shade. A crop of buckwheat has often been advised for this purpose, and where the soil and weather are favorable, will do much to subdue it. Some years ago I subdued a half acre of this grass, by planting the ground to artichokes, and cultivating carefully the first of the season. Later the shade did the business. I doubt if the adaptability and value of sweet clover for this purpose has been appreciated. If a quack grass sod is plowed late in autumn and sweet clover seed sown at once, or sown in early spring with a light seeding of oats or barley, and the grain cut early for hay, there might be, if the soil and season were favorable, a crop cut later for hay of mixed clover and grass.

The next spring the sweet clover roots having stored up a supply of nutriment, will start into a vigorous growth almost as soon as the frost is out of the ground, and soon, if there is a good stand of clover, get such a start of the grass as to most thoroughly smother it before the close of the season.

The next spring, the ground filled with decaying grass roots and the dead nitrogen-bearing roots of the sweet clover will be in an admirable condition for a crop of corn or other grain

But has sweet clover no faults? some one may ask. We answer yes, and so have some of our best friends, but we do not propose to give them up for that reason.

For best results, it is well to remember that its seed does not germinate as readily as other clover seed, so heavy seeding is necessary. The second growth of sweet clover, the second year, does not start from the crown like alfalfa, but from the stalk, and the first crop should be cut high. Again, like red clover, the leaves are liable to rattle off when curing for hay, and it should, therefore, be cured in the cock. It should also be cut before it blooms or soon after, before the stems become woody, for hay. Not a very long or serious list of faults. "But why," some one will ask, "if sweet clover is so valuable has it not been utilized before?"

Let me answer by asking another question: If electric power and light are of so great value as we have come to think in these later years, why has the water been allowed to pour over our waterfalls ever since the white man first came to America without producing either? Simply because we did not know how to turn falling water into light or transmit its power. Sweet clover has not been appreciated because its value has not been known or the best methods of producing it.

I believe beekeepers should take the lead in introducing it and proving to farmers its value as a farm crop. Send to the United States Department of Agriculture for bulletins, study them until you thoroughly understand its culture, give them to your neighbors, and prove their statements true by your own success in cultivating it.

I believe that sweet clover is the most promising plant at present known to both beekeeper and farmer, to whom it will give good crops of hay, pasture and seed, and elements of fertility to the soil as well as honey.

I have overlooked an important fact as to the value of sweet clover. It is well known to experts that it is more and more difficult to grow clover on soils that have been long cultivated, owing largely to exhaustion of humus in the soil. Sweet clover will grow freely in soils almost entirely lacking in humus if there is only a good supply of lime. The necessity of growing legumes to keep up the fertility of soil need not be discussed here.

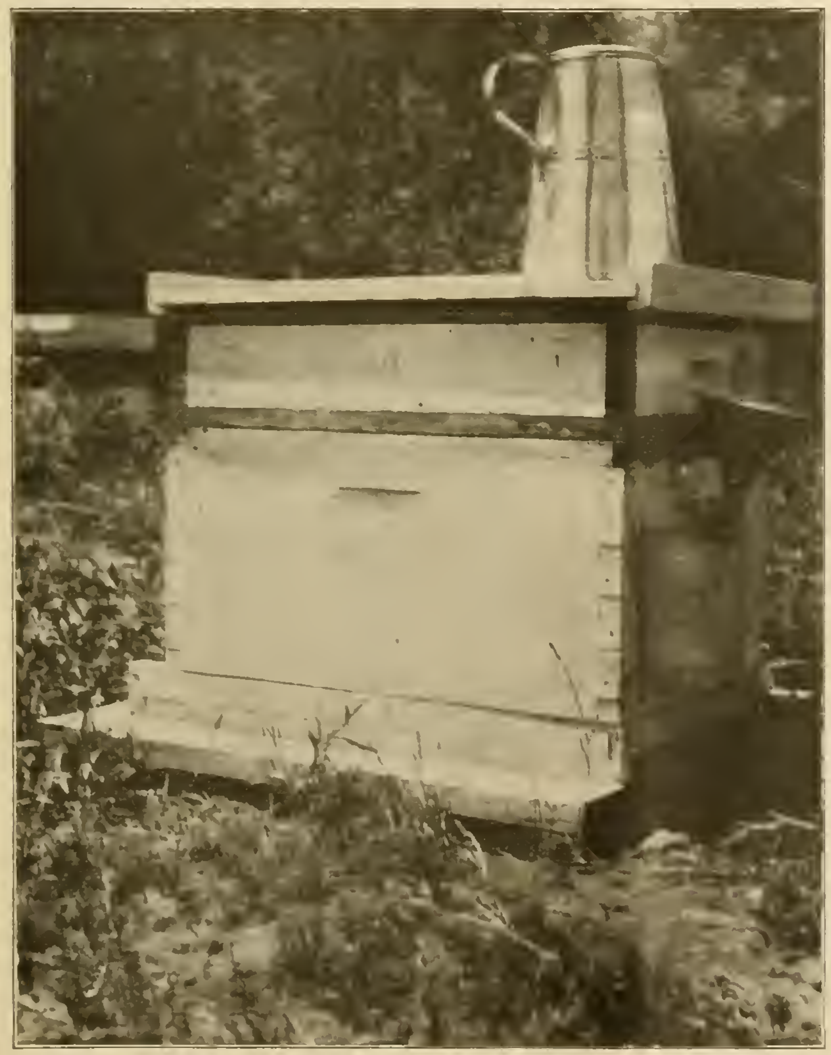
Middlebury, Vt.

[We cannot too strongly emphasize the remark made by our able contributor that "sweet clover is to play a very important part in subduing weeds of very bad character."

Paintbrush or orange hawkweed (*Hieracium aurantiacum*) was cultivated as an ornamental plant in Maine in 1875. It became frequent in New England in the early eighties, and is now distributed from eastern Quebec to the central States.—Pammel.

There is legislation against it in Canada.

Quack grass or quick grass (*Agropyron repens*), common in the central



M. R COREY'S FEEDER PERMANENTLY ATTACHED TO BACK OF THE HIVE
Mr. Corey lives at Olathe, Colo., and has about 150 colonies

States, is ranked among noxious weeds with Canada thistle, cocklebur, etc. It is a creeper and hard to eradicate.

In our locality of central Illinois, sweet clover has been found to exterminate the ragweed (*Ambrosia artemisiæfolia*), the plant which has been charged with causing hay-fever.

Although sweet clover will subdue these weeds by smothering them under its rank growth, it is not, itself, hard to eradicate, from fields or pastures where it grows.—EDITOR.]

Beekeeping in China

BY FRERE ROMAIN.

THE readers of the American Bee Journal will be pleased to know that this esteemed magazine is read as far as China; they will also perhaps appreciate the good will of that far subscriber who brings a note of variety in talking of the Chinese bees, which share in the oddity of their masters, the citizens of the newest republic. But there are so many reviews and bee papers in which a number of talented men are writing, that there seems to be very little chance to give anything worth reading. However, let me try it.

In China, we find the same bees as in Europe, the pure races excepted. They are nearly half yellow, but a little smaller than those of Europe, so much so that they rear "drones" in worker cells of European foundation. They are very slow to enter the sections; like their masters, they seem to distrust innovations.

In southeast China (Foo Kein) there exists another kind of bee, black, hairy, and much bigger than common bees. The workers are as big as black European drones. I nearly succeeded in getting a colony of those dragon bees. Unfortunately, the Chinaman killed them by smoking the box over the chimney of his hut. It was a great pity, for I believe those dragon bees are able to gather from the kidney beans (*Feves, Phaselus*), very abundant here in springtime. Common bees do not visit them, but the bumblebees and pseudo bees are foraging upon them the whole day long.

The Chinese bees are very mild and very easy to manipulate; a big hive may be visited, frame by frame, without smoke and without a sting. One of the most interesting qualities is that they completely ignore "propolis;" not a bit is found in their hives (while I know Italians gather a big lot). This has perhaps the great inconvenience to attract the "moth," which is in fact a terrible enemy of bees, in China. But the manipulation of frames is thus very much simplified; our spacers being staple screws fixed in the top-bar, a single push or pull can move five or six frames at a time.

Naturally the Chinese peasants do not know the modern frame hive. They make hives of whatever vessels come to their hands, box, bamboo basket, old barrel, earthen pot, old petroleum box, bucket, pail, but their preferred system is "drawers," or stories without bottom, added underneath and gathered from the top. By this ingenious system they sometimes obtain a very strong population, but what amount of drones! Those boxes are usually placed in front of their houses, high up under the projecting roof; often, also, they are placed inside the rooms, with a bamboo tunnel through the wall, or the entrance is made by simply removing a brick.

This last mode of location has the immense advantage of preserving bees of cold during winter, which is rather severe in the north of China, where a temperature of —25 degrees C. (—13 degrees F.) is often registered during the months of December, January and February. Another no less real advantage of this indoor location is to save the boxes from thieves. Hives in the open field, as in Europe, would have 9 chances out of 10 not to see the end of their first season; the Chinese being robbers or marauders by instinct or by necessity.

Bees are rather thinly scattered throughout China, a few here and there, except in certain districts in the West, where they are pretty numerous. In the wild state, bees are found in trees, old walls, in *tombs*, or rather in the space between the coffin and the masonry surrounding it. You must be informed that in China, the coffin made of thick planks (sometimes 5 inches), is simply laid on the ground and a rough brick wall constructed around it, leaving empty spaces, which those errant bees are glad to occupy. As far as I know, there are very few real "apiaries" in China. The best one certainly belongs to the Russian monastery, inside Pekin, N. E., which I visited in 1908. At that time it was composed of 85 large frame hives of different models, mostly resembling Layens (for cold climate), with Caucasian bees at the origin, imported by Russian monks, wintering perfectly well outside, protected by a thick cov-

THIMBLEBERRY BUSHES ARE A PRETTY SIGHT, AND THE BLOSSOMS FURNISH POLLEN AND NECTAR FOR THE BEES

WILD HAWTHORNE GROWS IN THE CANONS OF COLORADO, AND IS ATTRACTIVE TO THE BEES ering of straw or hay. Another belongs to the Trappe of Yang Kia Pin, three days west of Pekin, numbering about 20 hives. Very good mountain honey is produced from a special peach tree and lime trees, introduced by the Rev. F. Trappists.

Many at empts have been made by Europeans and Japanese to introduce Italian bees in China, but up to the present with little success. A friend in beekeeping, Mr. B., has bought more than 20 queen bees from America or Australia, but all were dead on arrival except three which the bees quickly dispatched to their ancestors—"out with the foreigners." Lately the Chinese Government has manifested the intention of improving beekeeping, but......years may pass before anything is done in practice. However, that industry could give very satisfactory results in many places.

In Shanghai, where, as a rule, winters are very mild, about —5 degrees C., (plus 23 degrees F.) strong colonies rear brood during the whole winter (a fact I have ascertained myself the last two seasons). Wax scales are very abundant on the bottom or floor. During the calm sunny days of November, December and January, the bees are gathering a good deal of pollen and honey from the loquat tree, just blossoming in winter; the consequence is that many colonies may swarm even in March. Middle China is in the same latitude as Texas.

Unfortunately our flora is very poor, China having no meadows and no woods. Here are our best honey plants: the colza or rape, the coronilla, some fruit trees, the wistaria, the virginia creeper, the cucurbitaceæ, the sunflower, the cotton, the loquat; of them the first only is abundant.

The honey, very inferior in flavor to European or American honey, is used only as a remedy, and the quantity obtained from a colony amounts to a few pounds only; 10 pounds would be a rich crop. Foreign honey is sold here at 85 cents to $1.00 a pound. The British Bee Journal, the American Bee Journal, Gleanings in Bee Culture, and L'Apiculteur, of Paris, are read and circulated in Shanghai, where the beekeepers, a dozen already, seem to have a keen interest in beekeeping, and no doubt will improve that ever interesting branch of agriculture. Appliances are supplied by Messrs. Taylor, Gamage, Maigre, Root, etc.

Shanghai, China.

A Canadian Bee-Escape Board

BY W. J. HOLTERMANN.

I HAVE read an article written by J. L. Byer in your number for July, page 231, asking about a new bee-escape board put out three years ago by A. F. Hodgson.

I have seen this escape board working from the first, and there is no failure in it under proper condition. I have seen every bee out of the supers in three hours, when the escape had been put on early in the morning of a fine day, when the bees are working well.

This is merely an improvement on the old solid escape board. It consists of a Porter double-exit bee escape, in a wire-screen board to allow heat to continue in the supers after the bees have left. The old escape board has always been more or less of a handicap to extracted honey producers, as cold honey is hard to uncap and extract.

I am sending you a diagram or sketch of the board. I trust it will make things intelligible. I refer to the double-exit escape, because it is much quicker than the single. Many escapes made do not work properly, as the least little jar seems to alter the springs so that they have to be spaced properly again, not a very convenient bit of work when the escape is fast in the center strip of the board. Mr. Hodgson always uses the Porter double-exit escapes, and they seem to stand hard usage.

A galvanized screen is used, the same as an ordinary window screen. Mr. Hodgson also uses these escape boards for moving bees from one apiary to another. He closes the entrance solid and places the escape board on top. That is the chief reason for the one inch space under it.

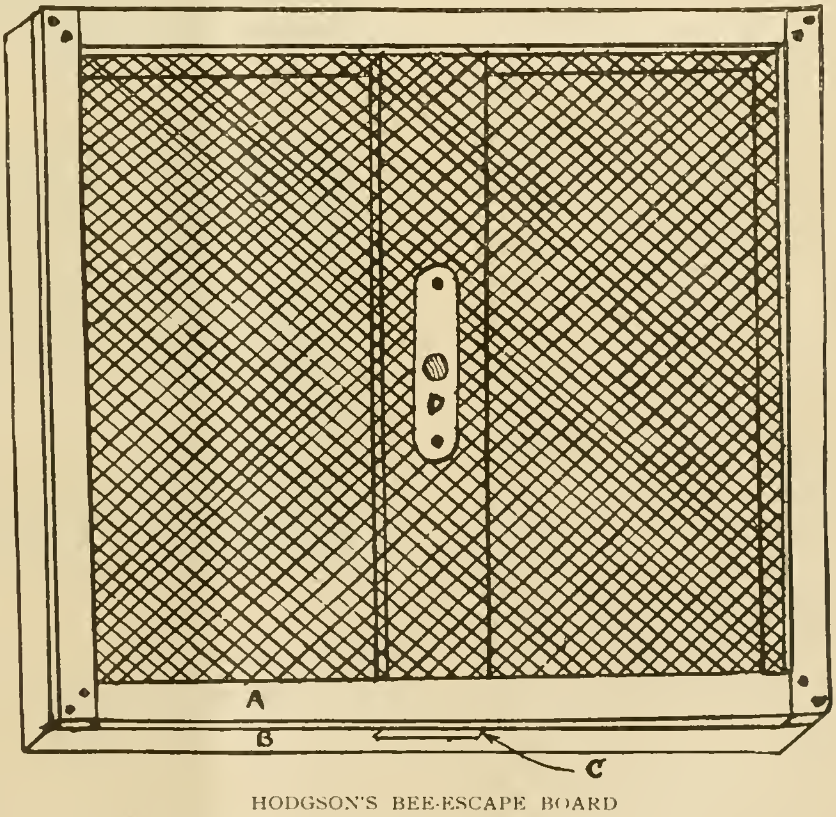
I have found trouble in store for me when a queen accidentally gets into the super and breeds there. Bees simply will not leave brood above; it is a case of brushing the combs off one by one, or taking the brood and queen and placing them down in the brood-chamber. Late in the fall or in cool weather with no honey flow bees are much slower in leaving the supers. In the latter part of July and the month of August is usually our extracting season. We run only for clover honey. When I start taking honey off, I make it a point to go a day beforehand and slip the escapes under the supers. I expect to be able to extract the next day. This is done usually in the morning, say 8 o'clock, then next morning I can go and take these supers off and put the escapes under another lot of supers This is certainly a short cut for the beekeeper running for extracted honey. No man could clean the bees out of 40 12-frame supers and have them in the extracting room within an hour and a half, with the old method of brushing.

I believe this escape is protected by a patent, but further particulars may be obtained from A. F. Hodgson, Jarvis, Ontario, Canada.

Just a word of warning to those who have never used bee escapes in robbing time. Always put a burlap cloth directly under the cover, when putting the escape on the hive. This cloth should hang over and down the sides of super at least six inches. When all the bees are out of the super, it is an easy prey to robbers if an entrance can be gained even for a single bee at a time. The supers may have to be left for a longer time than expected; then the robbers would do your extracting for you if the supers are not protected.

Jarvis, Ont.

[The above article is very practical. Not only may the combs in the supers get cold if the weather is cool after the bees have left them, but they may also get too hot in very warm days, when ventilation cannot be forced up by the bees. If the escape board described by our correspondent is successful, it will remedy both faults.—EDITOR.]



HODGSON'S BEE-ESCAPE BOARD
A, strip ⅜x1 inch; *B*, strip 1x1 inch; *C*, center strip containing bee-escape ⅞x3 inch; *D*, bee-escape, ⅜-inch space above, 1-inch space below

Making Winter Cases from a Mechanical Standpoint

BY G. C. GREINER.

WHEN I exchanged my former home among the Naples hills, where I had the use of a serviceable bee-cellar, dug in the bank, for the level plains of my present habitation, the wintering problem became one of the most important features for my consideration. Digging a bee cellar on level ground does not offer the advantages of a rolling or hilly surface, and as wintering on the summer stand had become a favorite method of many older members of the beekeeping fraternity at that time, I decided to adopt outdoor wintering for my future beekeeping operations.

With the exception of a few experimental chaff hives (see Fig. 1), my entire outfit consisted of single-wall hives made of ¾-inch lumber, and to make wintering in our zero latitude a reasonably safe undertaking, I decided to protect those thin hives by winter cases.

When ready to build them, the first point that demanded a decision was the lumber question. Repeatedly we find in our bee magazines the advice to use dry-goods boxes for winter cases, it being cheap material and plenty good enough for that purpose. This is not good advice in all cases. For the amateur who keeps a few colonies for pleasure or as a side-issue, these dry-goods-box winter cases answer all the purposes. But for the professional beekeeper who has to make his winter cases by the dozens or hundreds, this cheap dry-goods material is the most expensive he can use. Nothing but regular stock lumber, which may be of the cheaper grade, will fill the bill. If our hives are uniformly made, and no business beekeeper will have them otherwise, our winter cases must also be uniformly made, if we expect to do the work of making them and later of packing and unpacking systematically. To have our cases air and water tight, or at least practically so, they must be made in workmanlike manner, and this is next to impossible if our lumber is of all sizes, length, breadth and thickness.

Dissecting these boxes and saving the lumber, cleaning out the nails, etc., is a slow job, and careful as we may be, in spite of our scrutiny, we run our rip or cross-cut saw occasionally onto a nail, and then, of course, the workman has to take an hour or two off filing saws as a recreation.

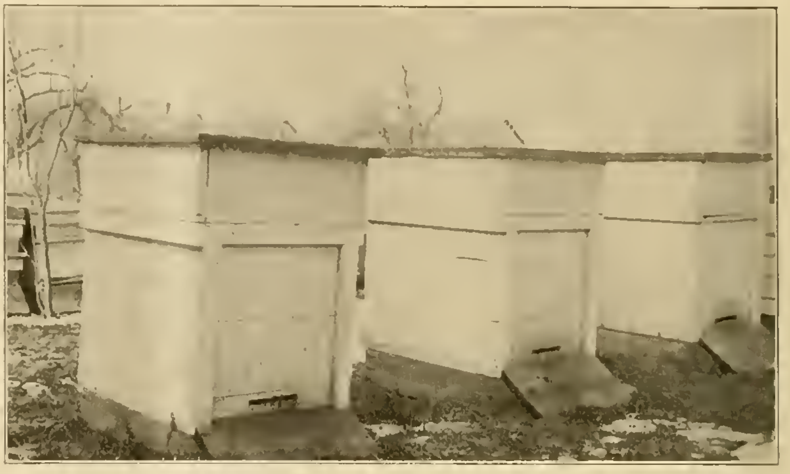


FIG. 1.—CHAFF HIVES MADE OF DRY-GOODS BOXES

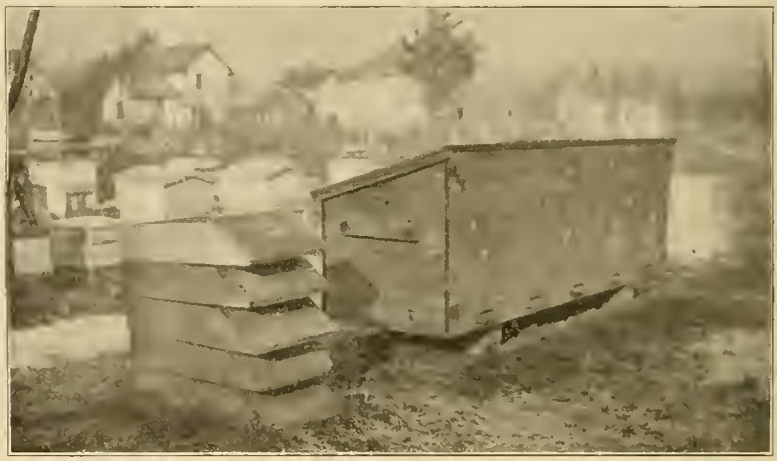


FIG. 2.—WINTER CASE OPENED TO RECEIVE BEES

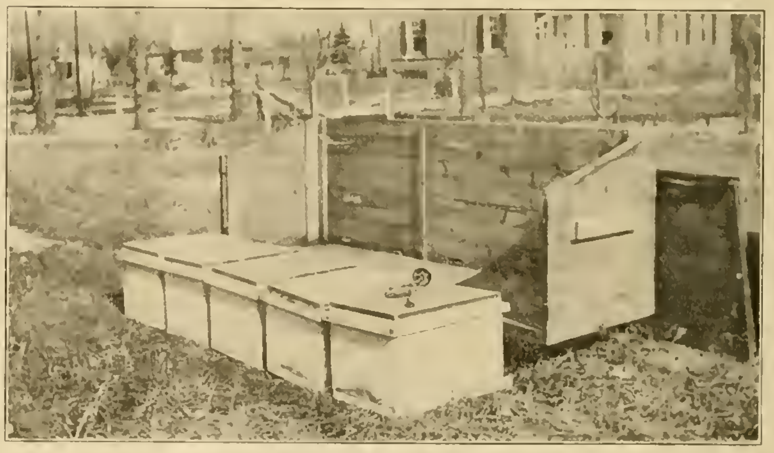


FIG. 3.—WINTER CASE COMPLETED

A short time ago I undertook to make a few hive stands out of some dry-goods boxes I had set aside for this purpose. It is the only part of our outfit that can be made of haphazard lumber, provided we cannot use our time to better advantage. After the boxes had been taken to pieces, nails pulled, etc., I managed to fit the material for one half dozen stands during the day. Every side piece had to be sawed at both ends and ripped on one edge at least, some on both. The lumber being of different thicknesses the end-pieces could not be cut after a pattern, but had to be fitted separately to each stand. The same with the alighting-board. No regular breadth being available, they had to be spliced and fitted each one to its place. Now the question arises, which is the more economical, use these cheap cast-away boxes and waste your time trying to make something out of nothing, or use regular stock lumber and have something to show for your day's work. With lumber of the right dimensions, several dozens would have been an easier and much pleasanter task than the half dozen mentioned.

In the construction of our winter cases the lumber plays a still more important part. After trying various kinds, rough, dressed, matched, soft and hard wood, etc., I have finally decided that second quality of white pine flooring gives the best satisfaction all around. Thin lumber ½ or ⅜ inch thick, as some beekeepers use for their cases, is not advisable for various reasons. Some years ago I followed a friend's advice and used yellow pine, sometimes called pitch pine, for my season's need. He claimed it was cheaper and longer lasting, not being liable to rot. Both qualifications are correct, but I would rather pay a little more and use the other kind. The objectionable features are too convincing to admit any argument, it is unnecessarily heavy and too liable to split when being nailed. I used it that one season, and have been sorry ever since I did it.

The size of the case is the next point to be considered. Allowing 3 inches of packing at the sides and ends and 6 on the top, decides width and height, and the number of colonies to be accommodated decides the length. When laying my plans for the first few I made as a trial experiment, I was misled by the mechanical rule of "the larger the case the more economical in regard to work and material." I planned them to hold nine colonies each. This was a great mistake, and like the pitch-pine lumber spoken of above, I used them only one season. Two features condemned them for all future use. First, they were too outrageously heavy to be handled by one person, and second, it required too much shifting to get nine colonies in proper winter position.

Although this first attempt could not be called a success, it was by no means a serious loss. By wasting a few inches of lumber and furnishing the necessary end sections, each one of these large cases could be cut in two, making one to hold five and the other three colonies. The experience of the next winter with these smaller winter cases gave such satisfactory results that I adopted the 5-colony cases for future use, and for a number of years all the added cases were of that type.

As time passed on, I also used still smaller cases holding three colonies, the remnants cut from those large cases the first year, and the longer I used them and compared them with the 5-colony cases the better I liked them. They offered advantages too apparent to remain unnoticed. While they were a little more expensive at the outset, requiring a little more labor and material, and later a little more work in packing for winter and unpacking in the spring, in proportion to the number of colonies accommodated, they eliminated practically all shifting of colonies for winter position, and the same re-shifting in the spring. Every third colony is in proper place for the winter packing, and each one of its neighbors needs only one shifting towards the center one to have the entire apiary in proper position for winter cases. Once going over the yard accomplishes this.

It is very different with the 5-colony cases. To arrange our bees in sets of five and avoid all confusion and possible loss of bees, the shifting has to be done with some caution, requiring perhaps three or four separate operations. Thus the question of size in regard to economy and practicability becomes one of deliberation. If we overreach in one direction, trying to save a comparatively small amount in the initial cost, which occurs only once, we reduce the practicability of our outfit by increased work once or twice every year. From this it would seem that by taking the golden mean as our guide, where the expense in cash on one side and the outlay of time and labor on the other balance one another, we would obtain the most satisfactory results.

Taking all these points into consideration, I have come to the conclusion that a case holding three colonies is the most desirable for practical use, and consequently have decided to make all new work that I may need in that line of that size.

The shape and other individual features of our cases depend in a great measure on the summer arrangement of our bees. If they are placed in straight rows, facing one way, or in quadruplets facing in different directions, a favorite method of some beekeepers, which I consider a great hindrance when producing extracted honey, our cases must be planned to meet these conditions.

The accompanying photographs are taken from cases as I use them today. Figure 3 is the one case ready for the bees. The roof and back section are removed and set against the front of the case. The bees are taken from the stands and set on the ground, the stands removed and the case has taken their places. Figure 2 is the case as it appears from the front when completed with stands and outside covers stacked at each end.

Sheltering bees, as here shown and described, is not as lengthy a job as it may seem to the uninitiated, if we are prepared for this part of our business. For my own gratification I timed myself last fall when preparing my bees for winter. One forenoon, when the weather was ideal for this work, I completed nine cases in 3½ hours. This included every stroke of work from setting the bees on the ground back of their stands, to the finished case as shown at Fig. 2. The tool that operates the square-headed screws at the corners, when opening and closing the back of the case, is seen on the first hive. It is of my own invention and construction; a wrench that fits into the common brace and does its work at lightning speed.

La Salle, N. Y.

Report from Wisconsin

BY N. E. FRANCE.

OUR honey season is over. We had cold and almost daily rains during the blooming season. Clover bloom was plenty, and some days the bees worked all the afternoon. Basswood bloom was plenty but short, and every day a rain. I had extra strong colonies, plenty of storage combs tiered up three to five high, left combs filled and sealed some time before extracting. The honey was too thick to strain through a cloth or gravity strain perfectly, and we had to warm up the honey in warm water so we could strain it. Now it is all in 5-gallon cans boxed for market. I am selling my honey at 10 cents for small lots or 9 cents by the 5-gallon can. My old customers will take the crop and more.

We have found another trouble with bees in many apiaries including my own. The brood seems healthy, but at the opening of the honey season both old and young hatched bees by the hundreds were running in the grass never to return to the hive. Upon examination my son found the lower part of the digestive organs swollen and full of brown-colored matter, quite offensive, often causing decay before the bee dies. Colonies thus affected were depleted from 10 to 50 percent of their hatched bees The disease was worse on cold and wet days of which Wisconsin has had an abundance lately, but little of it showing on bright warm days. We think the condition of the weather causes it, as we had an abundance of it 17 years ago all over Wisconsin for two weeks in June.

I am looking for a great meeting Sept. 7 and 8.

Platteville, Wis.

[The disease described by Mr. France seems similar to the Isle-of-Wight disease and the May disease or paralysis. The exact cause has not yet been pointed out, although the *Nosema apis* is generally found in diseased bees. Damp, cool, cloudy weather helps to bring it on. It is not usually of any importance as it lasts but a few days. But in moist countries like England the trouble gives serious concern.

Mr. Frank F. France, son of N. E. France, announced to us the birth of a son, Dean Floyd France, June 6. This is the 4th generation of beekeepers in a family known the world over as great honey producers. Edwin France, the great grandfather, was a contributor of the American Bee Journal 38 years ago. N. E. France was for years General Manager of the National Association. Many beekeepers will be glad to meet him at Hamilton Sept. 7.—EDITOR.]

Uniformity of Sections—Sanitary Section Made of Tin

BY F. GREINER.

IT is puzzling to the novice in bee-culture, and to the professional as well, when we see the many different styles of hives, supers, sections, etc., listed in the catalogs sent out by the bee-supply houses, and can scarcely help asking the question: Why all this confusion? When we investigate we discover that it is more notion than anything else. Principle is rarely involved. From the standpoint of the beekeeper or honey producer, and the purchaser or consumer of honey, but particularly from the standpoint of the dealer in hives and honey, uniformity in hives and sections is very desirable. There was a time when the 4¼x4¼ section was the standard. Would that *no* other size had been added. The introduction of the 4x5 and other tall sections was a great mistake. I am sure it would be a benefit to all if we were using uniform sized sections all over the United States.

This ideal condition will probably not be brought about, but we should work toward that end. The beekeepers are waking up to the fact that something ought to be done along this line as is shown by the subjects discussed at the conventions held in New York State the past winter. It would seem that the 4¼x4¼ section is now most extensively used by the beekeepers; this, then, would be the size upon which we ought to settle, discarding all the others. But does the 4¼ section of the past meet the requirements? If the 4¼ wood section does not fill the bill, and if in addition the supers now in use are not suitable for a section that will satisfy the demand, then it does not matter whether or not the improved new section is of the exact size of the one now most commonly used, and it might then be an advantage to adopt another size altogether.

Consumers of comb honey are often obliged to pay 25 cents per 13-ounce section of clover honey in the city. The 4x4 sanitary *tin* section, hermetically sealed when finished up, is a most desirable package for the retail trade, as may be found when visiting retail stores in cities. It is preferred every time by the purchasers.

The question is, can the beekeepers afford to use so expensive a package? In other words, will purchasers pay for for it? Let us suppose that we are willing to furnish 13 ounces of honey for 15 cents; this is by all considered a good price; adding the present price of the package, about 4 cents, and the shipping case, about ½ cent for every section, would make a total of nearly 20 cents, which such honey should bring to the producer. This is indeed what the retailers do pay for such honey, but to obtain it at that price, the producer would have to deal direct with the retailer, a thing which but few of us could possibly do. From this standpoint we, the producers, would gain but little if any by using the new sanitary package of tin. But when we consider that it sells at the rate of 10 to one of the regular wooden package, that the latter, even in paper carton, was left in the retailer's hand unsold, it would seem the sanitary would pay.

The beekeepers in New York go still further. They are not satisfied with the above; they want a package, glass or tin, for extracted honey interchangeable *in the shipping crate* with the comb honey section, so that a case of honey may contain both comb honey and extracted honey. Such a feature would be of especial value when producer is dealing with consumer direct. The latter may want, for instance, 1½ dozen sections of comb and ½ dozen packages of extracted honey; the producer can adapt himself to the demand, as purchaser may desire.

It seems to me that such uniformity of the section would be the desideratum. The New York beekeepers are testing this matter this season. It may be that we have arrived at a turning point in section making. This would be gratifying to those who have held that the use of basswood for sections is a criminal offense.

Whether it is possible to use the tin sections with our regular style wide frames or section holders is a question we will have to find out. The originator of the tin section, Paul Hunten, constructed a frame particularly fitted for such a section, but this is rather awkward, and we should have something better.

Naples, N. Y.

No. 9.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(*Photographs by the author.*)

We come now to some of the trees and shrubs which are generally recognized as important sources of nectar. Aside from the clover family some of the largest yields are secured from trees. There are a number of trees that secrete nectar in sufficient abundance to justify the beekeeper in seeking a location near such forests.

BASSWOOD OR LINDEN.

The basswood, *Tilia americana*, also known as linden, whitewood, and sometimes as limetree, is one of the best known sources of honey in the eastern States. There are other species closely related which also produce nectar, and which, perhaps, would not be distinguished by the casual observer. The natural range of the basswood is from Canada to Florida and west to Nebraska and Texas. It is also grown as a shade tree in other western States and is mentioned by Richter in the bulletin on honey plants of California, as an introduced species of value. Figure 41 shows the tree in bloom and Fig. 42 a close view of the blossom and leaf.

The tree thrives on rich lands and in the cooler regions of the country reaches a large size. The wood is soft and white and much in demand for making sections, separators and other bee supplies requiring a soft wood cut in thin sheets. For such purposes basswood has no superior. The wood is also sought for use in the manufacture of furniture, packing boxes, etc., as well as for paper making.

The blooming period is short, seldom yielding to exceed ten days or two weeks, and often for a much shorter period. The honey flows from basswood are irregular and only to be depended upon about two or three years out of every five. A heavy flow from this source occurs only occasionally, but when it does come it is worth waiting for, for enormous yields are sometimes secured. The honey is white in color with rather a strong flavor, but is usually regarded as high quality. Good basswood locations are no longer plentiful, as the cutting of the forests over the entire country has resulted in a large reduction of this along with other trees.

LOCUST.

The black locust or false acacia, *Robina pseudo-acacia*, is a native tree from Pennsylvania to Iowa and southward. However, it has been widely introduced into other States, thus greatly extending its range. It is now

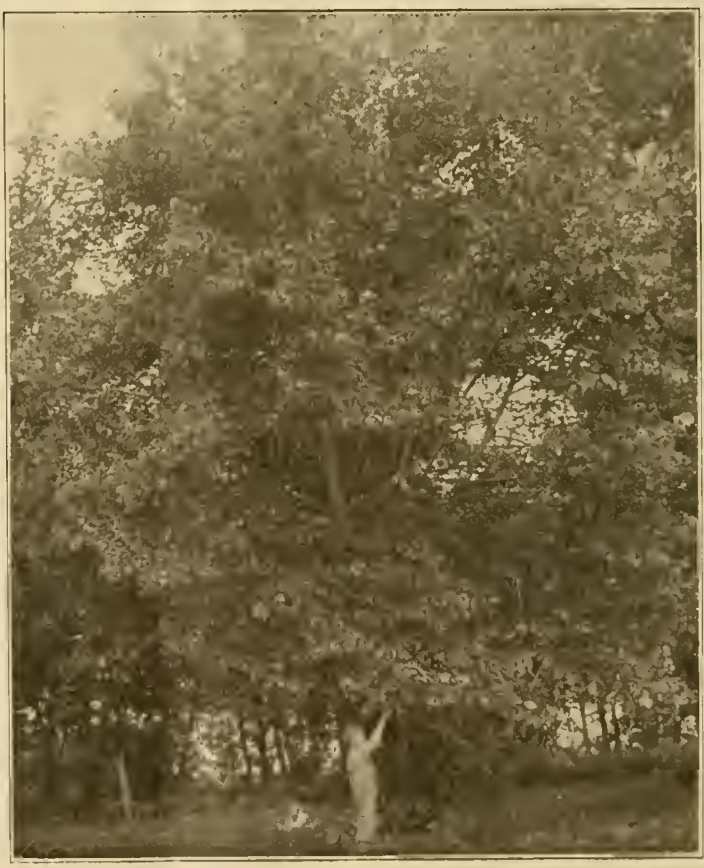


FIG. 41.—BASSWOOD TREE IN BLOOM

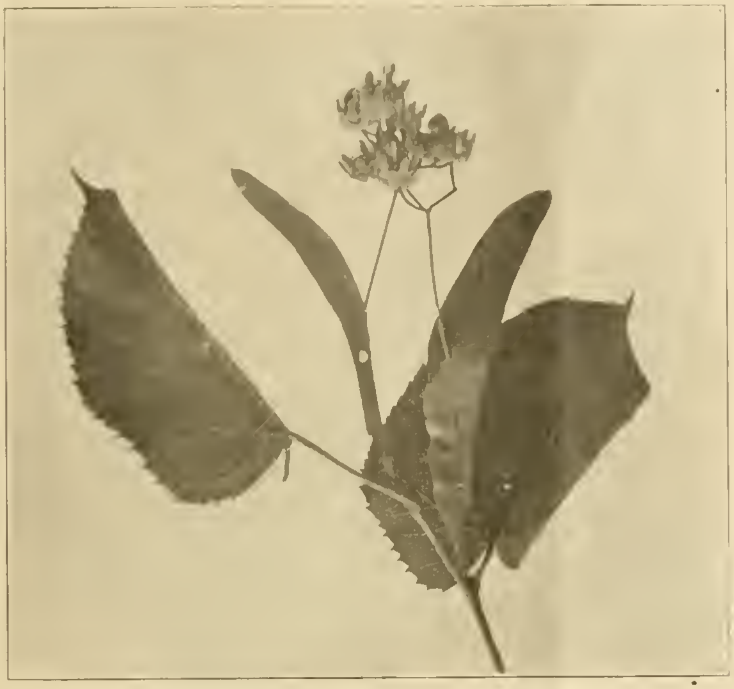


FIG. 42.—BLOSSOM AND LEAF OF BASSWOOD

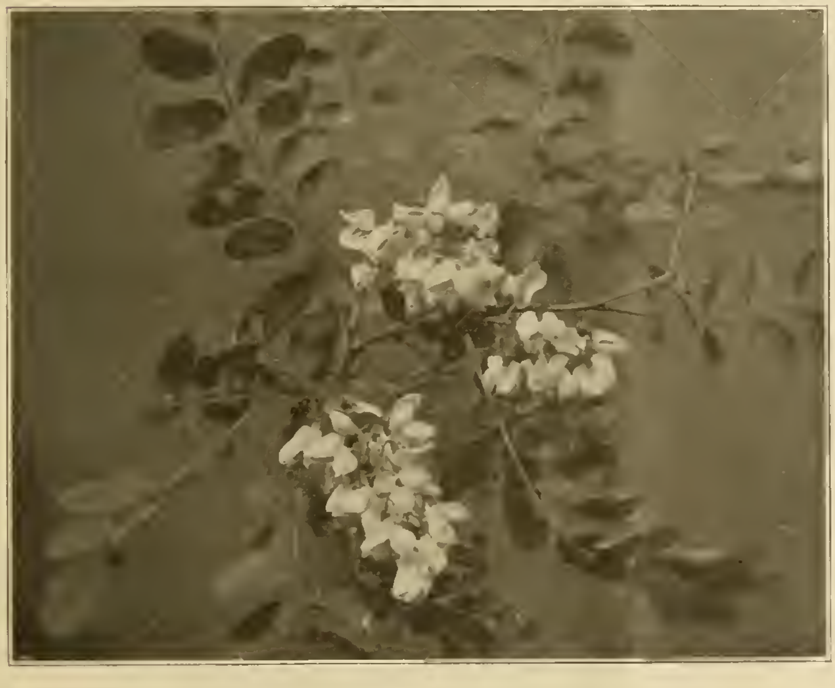


FIG. 43.—BLOSSOMS AND LEAVES OF BLACK LOCUST

to be found in many places from New England and Canada southward, and is reported as producing a surplus of honey in parts of California, and is listed among the honey plants of Texas.

The wood is desirable for posts, railroad ties and other purposes requiring durability. Large plantations are often set for utility purposes, so that in some localities the beekeeper may readily expect a surplus from this source. Borers are a serious menace to the life of this tree, and whole plantations of locust are sometimes injured by the insects, which kill the branches and sometimes the bodies of the trees, causing them to sprout again from the root.

According to Lovell, the honey is water white, of heavy body and mild flavor. Figure 43 shows the blossoms and leaves. The flowers, it will be noted, much resemble those of the garden pea.

In some localities the tree is known as white or yellow locust.

SUMAC.

The sumac family is represented by some species in nearly all parts of the country. The smooth sumac, *Rhus glabra*, is found from New England to Saskatchewan, Colorado and Arizona, south to Florida and Louisiana. I find no mention of it in Texas or California, although related species are found there. Figure 44 shows the blossom and leaf of this species. The fruit is very conspicuous in autumn and winter, the crimson berries serving the birds as food. Honey from sumac is of good quality and flavor and light in color. In some localities the quantities secured are sufficient to insure a good surplus in favorable seasons.

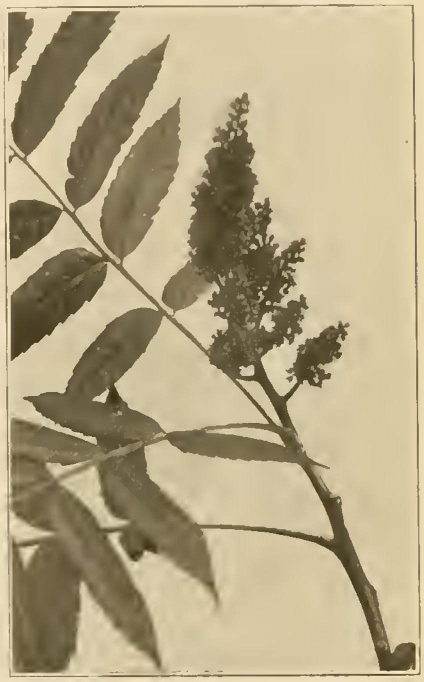


FIG. 44.—SUMAC.

The well known poison ivy or poison oak belongs to this family and is a good honey plant. Probably nearly all the sumacs ,produce some honey, and the family may be regarded as important additions to the honey-producing flora.

VIRGINIA CREEPER.

The Virginia creeper, also known as American ivy or woodbine, *Parthenocissus quinquefolia*, is a common climbing vine in thickets and woods from New England to Quebec and Manitoba, Dakota and Colorado and south to the Gulf from Florida to western Texas.

While the bees seek it eagerly at times and the vines fairly hum with them, it can hardly be regarded as of great importance to the beekeeper.

This plant is often confused with poison ivy, but the two plants can easily be distinguished by the difference in habit of growth, and by the five leaflets in the creeper, as shown in Fig. 45, while the poison ivy has only three leaflets to each leaf.

GRAPE.

The grape family, *Vitis*, is represented by wild species in all parts of the temperate regions of both hemispheres, and by cultivated species in nearly all parts of the world. There are about 30 species of wild grapes, and where sufficiently abundant they are very attractive to the bees. In many localities cultivated grapes are grown in large acreage. The nectar yield is not as abundant as with many plants, but is of some value where the vines are grown in abundance. Quantities of pollen are gathered from this source. At times honeydew is gathered from the leaves.

Atlantic, Iowa.

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European Foulbrood in Austria

BY M. G. DADANT.

I HAVE before me a 20-page pamphlet by Oswald Muck, and published recently in Vienna, entitled, "Seuchen der Bienenbrut" (Diseases of the Brood of Bees). The pamphlet is accompanied by two tables and several colored plates.

The author devotes the first few pages to a description of healthy brood and to a general survey of the foulbrood situation. He differentiates between six different diseases of brood in central Europe, named as follows:

1. "Boesartige," foulbrood (American).
2. "Stinkende," foulbrood (European).
3. "Sauerbrut."
4. "Sackbrut."
5. "Steinbrut."
6. "Kalkbrut."

The first and fourth of these diseases agree very well with the same diseases encountered in this country. The last two may be omitted as being more or less local.

It is to the second and third diseases that I wish to call particular attention; Stinkende or European foulbrood and Sauerbrut. These two diseases are not differentiated here in America. Witness the following extract from the pamphlet: "The 'Stinkende' or European foulbrood and Sauerbrut are in etiological respect and in the manner of development very closely related. Dr. White, of America, does not seem to recognize "Sauerbrut" in definite form as we do in Europe. He seems to have come upon the former and diagnosed it as a virus including the two, speaking of the two diseases in general as European foulbrood."

I think that those who have come in contact with this disease in this country will be interested in the following description of the symptoms of the two diseases as differentiated by the German pamphlet.

"With 'Stinkende' (European) foulbrood one can observe the following charactertistics:

"1. The sick larvæ are flabby.

"2. They lose their luster and become from brown to coffee colored.

3. "The dead larva is transformed into a brown, dauby, weakly, stringy, (slightly ropy) mass.

"4. The larvæ give out a strong disagreeable odor like glue, foot sweat or foul paste. In bad cases one can recognize the smell by merely opening the top of the hive.

"5. This foulbrood mass dries at the bottom of the cell or on the lower wall and looks like a dark brown polished scale that consists entirely of spores and contains no bacilli.

"6. Here and there larvæ die in the sealed cells; the brood is irregular. In the same comb with the diseased larvæ, and at the same time, healthy brood appears."

But in "Sauerbrut" other symptoms are noticeable.

"1. The sick larvæ are flabby and

"2. lusterless, and from light to dark yellow in color.

"3. The foulbrood mass is pulpy and not stringy, and can be taken out of the cell without pincers without breaking the skin of the larva.

"4. The odor is sharply sour, like concentrated vinegar.

"5. The dry scale is almost golden brown, and may be easily loosened

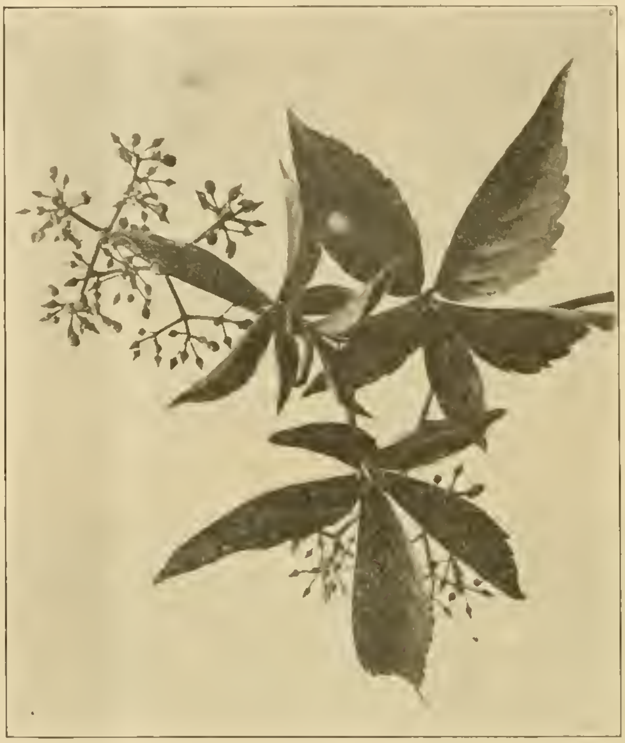


FIG. 45—VIRGINIA CREEPER OR AMERICAN IVY

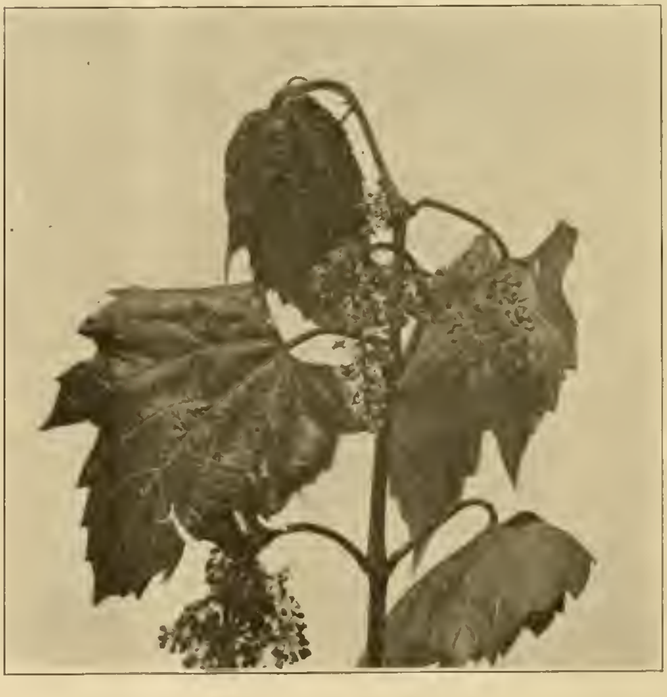


FIG. 46.—WILD GRAPE BLOSSOMS

from the cell wall.

"6. The brood is irregular.

"Both diseases are a light form of foulbrood and often disappear of themselves under favorable circumstances. The lighter form is 'Sauerbrut,' which can readily turn into 'Stinkende' (European) foulbrood, and finally into American foulbrood, since bacillus larvæ, which comes forth more abundantly than one thinks, crowds out the other bacteria."

When we first came into contact with European foulbrood, we were at a loss to understand how some beekeepers could maintain that it was a "stinking" disease, nor could we ever find any traces of slight ropiness such as we were led to believe existed by prominent writers. Later experiences have shown us, however, that under some circumstances the ropiness exists, although in the light cases we have had, no smell was noticeable. In one or two instances the color and ropiness were so pronounced as to lead us into believing that the colony was affected with American foulbrood.

This, I believe, will explain why authorities disagree so thoroughly as to the smell of European foulbrood. Some have had one stage of the disease described in the pamphlet as "Sauerbrut" while the others have had the the worse form described as "stinkende."

Our experience has been almost wholly with the mild form of European foulbrood (Sauerbrut), while we have had only a few cases of the more virile form (Stinkende), and have seen both forms in the same colony.

The New York authorities, as I remember, state that European foulbrood exists in the State, in some cases being much more virulent than in others. Sometimes it gets so bad that it is deemed advisable to shake the colony, as in American foulbrood, so as to weaken the strength of the disease.

Hamilton, Ill.

A Remarkable Tree for Avenue Planting

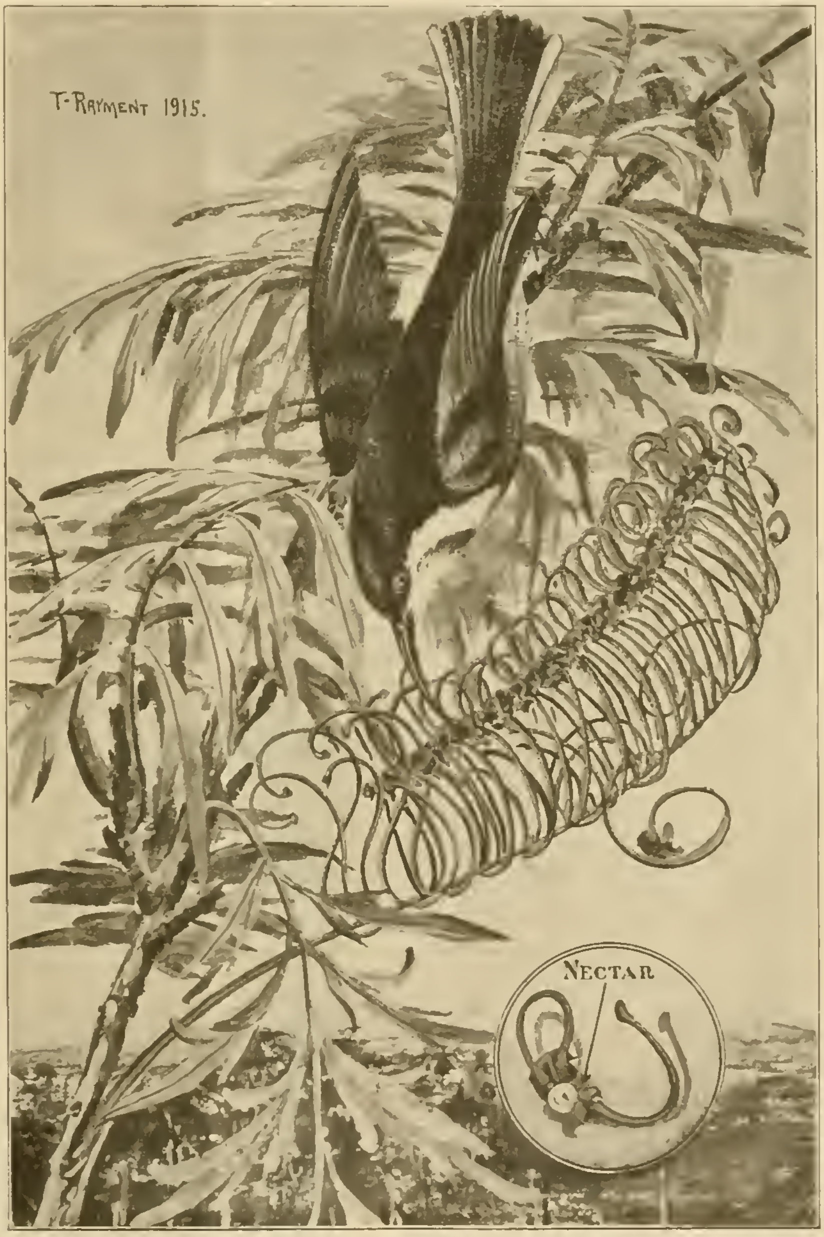
BY TARLTON RAYMENT.

CALIFORNIA has taken the eucalypts to its bosom, so to speak, especially the blue gum (*E. globulus*). (When the Australian advocates of forest preservation desire to stir up a neglectful public to the urgency of conserving the indigenous timber, they always cite the possibility of our receiving blue gum sleepers from California.) However, there are many other wonderful trees in this commonwealth eminently suited for cultivation in America.

While many species of the eucalypts are extensively grown in the United States, and are highly prized, the timber from these trees is entirely destitute of "figured" grain characteristic of some other Australian botanical orders. The tree—details of which are shown in the illustrations—known to Queenslanders as "silky oak" (*Grevillea robusta*), is indeed a remarkable one. In its northeastern habitat, the glorious feathery blossom provides an unforgetful floral harmony during November and December—hot weather in Australia.

During this period of florescence, the unique cadmium-orange colored flowers completely eclipse the soft, silvery green foliage. (Where a dark background, such as pines, is provided, the flaming bloom makes a lovely artistic contrast.) Everything is so "feathery," floral gossamer, in composition. The clusters of florets; the urgent sheen of the leaves; the large sparkling drops of nectar so abundantly secreted—when a spray is plucked the hand is drenched with the limpid fluid—the droning of contentious bees busily salvaging the sweetness from the depredations of the honey-eaters, all go to make the "silky oaks" beloved by all nature students who come in contact with them. The species grows rather quickly, and with artistic symmetry, making it an ideal evergreen for avenue planting.

Inset in the picture, is a detached floret displaying the large globule of nectar which forms at the base of the aborted petals. Close to the nectary are two crimson splashes. The amount of sweet liquid offering in each tiny floret is beyond the capacity of a honey bee, and when it is remembered that many dozen florets are in a single spray, the nectariferous production excites our wonder. The pistils assume a curvilinear sweep, and this gives the sprays an uncommon "looped" appearance. The foliage is suggestive of the classical acanthus, and is delicately pale on the underside. (I have endeavored to portray this feature in the smaller drawing, where the curious arrangement of the seed pods is also shown.) As the capsules dry, they



A SPINEBILL HONEY EATER RIFLING THE RICH NECTAR OF THE SILKY OAK BLOSSOMS burst open, like a bivalve, and liberate a small, flat, heart-shaped seed. The bunch of seed vessels repeat the disposition of the florets, and this is apparent in the illustration.

The honey-eaters mentioned above, are like the "silky oak," peculiar to Australia. These handsome birds belong to the order Meliphagidæ, a very appropriate name. They are provided with a brush-like tongue, beautifully adapted for sweeping the nectar from the flowers of the indigenous flora; for example, eucalyptus (gum trees), Banksias (native honeysuckle), Epacris (native heath), etc.

The long, slender, curved bill permits a thorough exploration of the nectaries, while the strongly developed feet allow the birds to hang in amusing acrobatic positions to reach the honey and pollen that forms the chief items in the birds' dietary. In summery weather, the loud musical note, "tink chink," of the honey-eaters is nearly always associated with the advent of "silky oak" blossom. However, in forests of this valuable tree there is rich, golden nectar for all; none need go short. (The writer has closely observed bees on "silky oak" bloom, but has never succeeded in securing any pollen.)

The bird in the picture is the spinebill honey-eater, though sometimes called "the cobblers' awl" in allusion to the long, curved beak. The timber of the British oak is historical, but its beauty is surpassed by the "satiny" figuring of the Australian "silky oak." Californians "get busy" and add a new beauty to the landscape of the Pacific Slope.

Gippsland, Victoria, Australia.

Honey Vinegar

BY THE EDITOR.

"SOME years ago there was an extensive article on the making of honey vinegar in the American Bee Journal. I have lost all those copies and cannot refer to them. I would like to know how to make it. It seems to me that in the quick process the vinegar had to drip through beech shavings. We have no beech now, but we have post-oak and hickory. I believe, as I remember the process, it is like this:

"Put honey in good barrels until a fresh egg will float, then put in some mother of vinegar and let it work; skim it as often as necessary and keep in a warm place. Then if this process is right, after the vinegar is made, I would like to know how to keep it indefinitely so it will remain clear and not become cloudy and form new mother? Can it be put in bottles and brought to a boil and sealed so it will keep?—E. B. N."

The articles to which our correspondent refers were published in March and April, 1910. Those who retain the Bee Journal files may readily refer to them. But as the majority of readers fail to keep the back numbers of the American Bee Journal in a shape that will allow them to find promptly the matters desired, and as we have had several enquiries similar to the above, we will give the principal requirements for the making of good vinegar from honey.

When honey sells readily and apples are plentiful, it is a mistake to make good honey into vinegar, for apple cider is exceedingly cheap and makes good vinegar. However, we often find ourselves with a supply of water which has been sweetened with honey, in washing cappings preparatory to melting them into wax or in cleansing large vessels which have contained honey. Throwing away this sweetened water is a waste, for it may readily be used to make excellent vinegar.

If we make our vinegar by diluting a known quantity of honey, we should use about 1½ pounds of honey for each gallon of vinegar. We may use as much as 2 pounds or as little as one pound and the result will be stronger or weaker vinegar, the strongest vinegar requiring the longest time to make.

If we use sweetened water of which the strength in water is unknown, we must test it by allowing a fresh egg to float in it. The egg must come to the surface, showing a spot out of the water about the size of a dime. If the egg does not show, add more honey, if it rises too much, add water until the proportion is right.

Honey which has fermented slightly because unripe or because it has been exposed too long to the air is unfit for use except in vinegar.

But there are other germs of fermentation than alcoholic and acetic fermentation germs, in honey. The flowers from which the honey was taken may have contained many different germs. It is advisable to kill all of them by heating our honey water to say 180 degrees. After that we will supply the proper germs. Our method is to use a little fruit juice put into the sweetened water after it has cooled down to 70 or 80 degrees. If the air is allowed to reach the preparation and the temperature is sufficiently warm, the alcoholic fermentation will begin at once and will be very active for a week or so.

We are then ready for the acetic or vinegar fermentation. If plenty of air is supplied and the insects are kept away it may begin before we are aware of it, for those who are in the habit of making wine know how readily an alcoholic fermentation will turn to acetic when plenty of air is supplied. But if the acid fermentation does not take place it is easy to supply it by adding to the liquid a small quantity of good vinegar or a little lump of vinegar mother. We understand, however, that the so-called vinegar mother is only a deterioration of vinegar, which will not be found in quickly made vinegar. This is the place where the beech shavings have come into play, with manufacturers of vinegar on a large scale. Acting on the principle that plenty of air is needed, they allow their vinegar to drip through a barrel which is open at both top and bottom and is filled loosely with beech shavings. The vinegar dripping through is so easily oxidized that it becomes strong in a very short time. A very important requirement is to keep insects away from it. The vinegar-fly (*Drosophila*) would soon reproduce in it. I believe that other hard-wood shavings, such as oak or hickory would be as good as beech shavings to allow the dripping of the vinegar.

When the vinegar is in the process of making you will notice a small white substance floating upon it. This is the fermenting bacterium (*Mycoderma aceti*), which is always present in good vinegar in the process of making. If you have managed to supply it, or if it has been supplied from the air, where it is usually found, your vinegar will make readily.

When good vinegar is made it often contains a small eel-like worm, *Anguillula aceti*, which may be seen with the naked eye if a little of the vinegar, in a thin vial, is placed between your eye and the light. This is never found in artificial vinegars made of injurious acids, and is perfectly harmless. It may be readily killed and drained out by heating the vinegar to 180 degrees and allowing it to settle. Both this

NEATLY KEPT APIARY OF WM. WESTON, AT ESSINGTON, PA.

and the vinegar-mother are stopped in their development by the application of heat. So heat should be used before bottling the vinegar.

As a matter of course there are some requirements to follow if we want good vinegar. It must be made in clean, fresh barrels, entirely free from mold or bad taste. It must not be kept in tin or in vessels containing iron, as it has powerful rusting influence. It must be sealed as soon as its fermenation is over. Its influence over other articles of consumption is very great, and it is a mistake to keep open jars or vessels of preserves, marmalades, cider, claret, etc., in the same cellar.

For making pickle preserves, a very excellent method consists in flavoring the vinegar with leaves and stems of tarragon (*Artemisia dracunculus*), an aromatic perennial plant easily grown in our gardens and deserving of more credit than it gets. Tarragon vinegar has a high reputation where it is known.

The vinegar made from honey is as good as the best, if properly managed. But like all other culinary preparations it requires care in the making and proper preservation.

If your vinegar is sweet, it is because its alcoholic fermentation has not been permitted to terminate before the acetic fermentation took its place. Both may go together, but the work is more thorough when they follow each other. Sometimes the sweetened water is so strong in honey that there is always a surplus of sugar. In that case add more water and put your vinegar in a warm place. It may continue to strengthen during the winter if you keep it near your cellar furnace or close to the kitchen stove. If it is too weak, add a little honey.

The adding of honey vinegar to cider vinegar often improves both, the former supplying additional strength, the latter aiding the acetic fermentation by the numerous germs it contains.

Hamilton, Ill.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Unfertile Queen—What to Do for Laying Workers

I am the owner of an apiary of about 70 colonies, in a little town of 2000, situated on the east coast of southern Florida, 50 miles north of Miami. Ever since a boy I have liked bees, and have always kept from 8 to 10 colonies. A year ago I bought about 40 colonies, and have now a little apiary of which I am rather proud. I am 21 years of age.

Having acquired so many bees all of a sudden, I am meeting with quite a few difficulties which I sometimes overcome, but often not. My main trouble is to dispose of my honey crop, for which I have not found a regular market. I have now on hand over 80 gallons for which I cannot get more than 45 and 50 cents per gallon. It is a very good grade of honey, a mixture of orange and palm blossoms.

1. I have a colony of bees which I caught as a spring swarm. They started to build very nicely, but after about a month I noticed they had stopped working almost entirely, and upon looking I found them to be queenless. They had the hive about half filled with capped honey, so I gave them a frame with young bees and larvæ. After about a week they had from five to six nice queen cells built, two of which were sealed. Being very busy after that I did not get to examine them for quite awhile, probably another month. But noticing them still weak I looked them over again, and to my surprise I found the comb filled with drone brood. Thinking that they had failed to rear a queen, and had laying workers, I examined them closely, and again to my surprise I found the queen; though it was but very little longer than the workers, it was a perfect queen. It seemed to be dragging its left hind leg, as if it were hurt. What do you think, has she not mated?

2. What do you do with a colony that is affected with laying workers and still is fairly strong? FLORIDA.

ANSWERS.—1. I don't see any other answer to the puzzle than the one you have given, namely, that the queen was not fecundated.

2. In nearly all cases the best thing to do with a colony having laying workers is to break it up. If for any reason it be desired to keep it intact, then it will not do to introduce a laying queen, as it will most surely be killed. It may or it may not respect a sealed cell, but it will receive kindly, without any caging, a virgin less than 24 hours old. It will help in more ways than one to give the colony one or more frames of brood from a normal colony. Indeed, it may answer to do nothing more than to give brood, some of it eggs or young unsealed, and allow the colony to rear a queen therefrom. Brood given more than once would keep up the strength of the colony until time for the queen to lay.

Style of Sections to Use—Bottom Boards—Prevention of Swarming, Etc.

1. What style of section would you advise? I had thought of the ideal, 3⅝x5x1½ plain.

2. Do you prefer the plain or beeway section?

3. Are not many of the best plain sections ruined for shipping by the bees drawing them a little beyond the wood?

4. Do the moths bother the honey after it is removed from the hive? If so, do you fumigate, and how?

5. I believe you use a 2-inch space under your frames with a rack made of lath, or something similar on edge to keep the bees from building comb in this space. Is there enough advantage in this 2-inch space over the ⅞-inch space of the regular bottom-board to warrant one in putting in something not a standard? Further, would the bees build to any extent in the ⅞-inch space of the regular bottom-board when running for comb honey? What percent of swarming would you have when using this deep bottom-board if you did not look over your brood-nest regularly and remove queen-cells?

6. Do you leave your comb honey all on the hive until the honey season is over or do you take it off as fast as finished?

7. In the early part of the honey flow, in putting on extra supers, do you put them underneath those already on top?

8. What do you do to prevent swarming, and what percent of swarming do you have in spite of all your preventatives?

9. Do you use the 8 or 10 frame hive, and is it a Langstroth? If not, give the dimensions of the hive. I propose using the 10-frame Langstroth, as we have a 3 months' honey flow here.

10. I have never seen the necessity for a queen excluder with the beeway sections, but the plain is considerably more open, and I wonder if it is necessary to use queen excluders? If so, that would be a big point against the plain section. CALIFORNIA.

ANSWERS.—1. After trying more or less the different kinds of sections, I settled down some time ago upon the 2-beeway sections, 4¼x4¼x1⅞. I think this is the preference of the great majority of comb-honey producers.

2. Beeway.

3. I don't think there is so much objection on that score as there is because the plain require so much more care in handling lest the fingers be thrust into the comb when they are handled. More care must also be taken in setting down a plain section lest it topple over. During cleaning, the plain section is more likely to be injured. In general it may be said that the projection of the wood in a beeway section is a protection, although it has more of a clean look than the plain.

4. Of late years I have no trouble in that line, probably because of Italian blood in the bees. Years ago, with black blood, I had a good deal of trouble, and fumigated with sulphur. Carbon disulfide may be better.

5. Yes, I think there is advantage enough or else I wouldn't use them, both on account of the expense and because I am averse to have anything out of the usual fashion. I don't know what percent difference in swarming is made by the deep bottom-board; I know that it gives better ventilation, and that good ventilation is a factor in the prevention of swarming.

6. I take off a super as soon as it is all sealed except the corner sections, although often these will be finished, too.

7. The second super is put under the first, and at the same time another empty is put on top. This last serves as a safety valve in case the bees should need more room. There is another important advantage. With the best care it will sometimes happen that the upper starter will not be fastened securely its entire length, although this would not be noticed in ordinary handling. If such a section be put next the hive under another super, the bees will cluster upon it and drag it down. If it be put on top the bees will very gradually occupy that super, and will fasten the starter securely before any special weight is put upon it. In most cases the top super will not have much, if any, work done upon it at the next visit, but it will be ready to be put down as the lowest one, and a fresh empty super will be put on top. When the flow is on the wane some care must be taken not to have too many unfinished sections, and then the empty super is not put below, but if the bees need more room they can work up into the super on top.

8. To tell all about what I have done to prevent swarming would be too long a story to tell here, but if you care to know about it you will find it in "Fifty Years Among the Bees." After all, I count the prevention of swarming an unsolved problem. At a rough guess I should say that there may be from 5 to 10 percent of the colonies actually swarm. But if they do swarm, no swarm is ever hived as a separate affair, but obliged to remain in its old colony, for one of the important points in securing good yields is to keep from dividing the forces.

9. I use the 8-frame Langstroth, or dovetailed, not because I think it better than the

10 frame, but because I changed to 8-frame when that became the fashion, and as a matter of convenience still continue using the smaller hive.

10. I don't know, but I doubt if there would be any more need of excluders with the plain sections.

Placing Bee-Escapes—Bees Casting Swarms—Age of Brood—Where are Queen-Cells in the Hive?

1. When you have on more than one super how would you put a bee-escape under; would you lift the supers one at a time and put them on a bench, and then after the escape is on put them back?

2. If you wash yourself with salt and water before handling bees, will it help to keep them from stinging?

3. One of my colonies put off a swarm about 10:30 a.m. and went back. The next day it swarmed again about 7 a.m. What was the matter? It was the second swarm.

4. Can I put a swarm back? Does it make any difference what hive you return them to? What is the best way to return a swarm?

5. Can you tell how old brood is if you do not look at it very often?

6. When is the best time to blow smoke in at the entrance when opening a hive, on a cloudy or sunshiny day, or both?

7. How long can you keep the hive open when handling bees without smoke? When they come to the top of the frames do you smoke them back?

8. Are queen-cells in the middle of the hive or on the sides, or both?

MICHIGAN.

ANSWERS.—1. If there are two or more supers on the hive you are not likely to want to take all off at a time unless at the close of the season. So lift off supers until all are off that are ready to take, setting them on end on the ground, leaning against their hive or some other hive, or perhaps setting them on top of an adjoining hive. Then return any that are not ready to take yet, put on the escape, and then the super or supers that are ready to take.

APIARY OF C. KLABUHU & SONS, CONNEAUT, OHIO

2. Unless your hands are dirty, I don't believe washing in salt water will do any good, and then soap is better than salt. When bees are swarming they seldom feel like stinging.

3. That often happens. I don't know just why.

4. You can return it to the hive it came from, but if you return it to some other hive the bees might be killed. You can return it just the same as you hive a swarm in an empty hive.

5. An egg hatches in three days. Then the larva grows rapidly during the five or six days it remains unsealed, and you can tell something about its age by its size. After it is sealed you can tell nothing about its age by looking at the sealing.

6. The time to blow smoke into the entrance is just before you take off the cover, no matter what kind of a day.

7. Maybe one smoking will do for all day; maybe two minutes. So long as the bees remain peaceable they need no more smoke. No matter if they do come to the top of the frames so long as they remain good natured, but when they begin to fly at you give them enough smoke to make them behave.

8. A queen-cell may be anywhere in the hive where the bees have any other brood, as on a bottom-bar.

Swarming—Uniting

1. I had two swarms come out of one hive at the same time and go away together. Why was this? I put them in a hive and in two days one swarm came out.

2. These two hives seem to be about one-third drones; would it be right to use a drone trap?

3. I would like to have your best plan for putting colonies in with each other.

MICHIGAN.

ANSWERS.—1. You say you had "two swarms come out of one hive at the same time." That would really be only one swarm, the swarm dividing into two parts, as sometimes happens. Like enough they came out after two days because the hive was too close and warm, but I don't know why only part of them should do so.

2. It would be a good plan to trap the drones, and it would also be well to get rid of some of the drone-comb, if with a good queen the bees still have too many drones.

3. I don't know of any safer plan than the newspaper plan, unless it would be more newspaper. For with more than one thickness of newspaper the bees would have a bit longer time to unite.

Replacing Combs in Same Order, Etc.

1. To what extent at this time, or any other time, does it make any difference when examining colonies to replace the frames in the same order as taken out?

2. Do you destroy all *but* one or two queen-cells? Is it not risky to leave only one? or is it the correct thing to leave only one?

PENNSYLVANIA.

ANSWERS.—1. Early in the season it is quite important to keep combs in same order in hive, for the bees have the brood-nest arranged approximately in the form of a sphere, in the best form for the production of brood, and any disarrangement may result in loss of brood. When hot weather comes, and the hive is boiling over with bees, provided the combs have been built on foundation so that the septum is in the center of the frame, it matters little about the order of the frames. Indeed some think that putting the outside combs in the center has a tendency to prevent swarming.

2. Your question is not as definite as it might be. If you are talking about killing cells to hinder or retard swarming, then by all means destroy *all* cells. To leave one would be about as bad as to leave all. If you mean destroying cells about a week after a prime swarm has issued, so as to prevent an afterswarm, then leave one cell, and only one. If you leave two, you are just as likely to have an afterswarm as if you left all. Yes, there is a little risk in leaving only one, for sometimes that one will happen to be bad, but there's the greater risk if you leave two that an afterswarm will issue. No, it's hardly a greater risk either, if the single cell left is bad, for in that case the colony would be left hopelessly queenless.

Parcel Post for Honey

Can extracted honey be sent through the mails in friction-top pails by putting it in wooden boxes, provided the honey is candied solid so that it would not run if the cover was taken off in transit?

MINNESOTA.

ANSWER.—Yes, such honey can go by parcel post all right.

Color of Honey

I have been rearing bees for several years and my honey has been real white, sourwood and other blossoms, and this time the honey is yellow, about the color of gold, and a fine flavor. What is the reason for this?

VIRGINIA

ANSWER.—I don't know. Of course the change from white to yellow is due to the bees getting honey from some new source; but I have no idea what that source is. Possibly some other Virginian can help us out.

Where to Get Bees

I want to start an apiary and don't know where to obtain some Italian bees. Will you please give me the desired information.

LOUISIANA.

ANSWER.—I have no means of knowing any better than you. Your first effort should be to get the bees as near by as possible, since expressage is very expensive, and the railroads will not accept bees by freight. A little ad in your local paper might discover some one close by, having Italian bees of whom you had no knowledge. Possibly you may find in the advertisements of this journal what you want, and if not then an ad in these columns costing very little would probably bring a number of offers.

Preventing Increase—Wintering

1. Last spring I bought three swarms of bees from one of the neighbors and they all have crooked combs in the brood-chamber. He did not use starters, and they are so crooked that I cannot pull the frames. These same colonies have each swarmed three times already. The first swarms were large. I hived them in new 10-frame hives. The next three swarms were smaller. I also hived them in 10-frame hives, and the last three were small. As I did not want any more bees, I killed the queens in the last three swarms and put them back in the parent hives. They did not swarm any more. As I don't want any more swarms, how can I prevent them from swarming?

2. One morning I found six dead queens in front of one of the hives. Why do they have so many queens?

3. Two of the first new swarms have already 75 pounds of comb honey. They were hived about three weeks ago. One of

the neighbor beekeepers told me that they have too much honey and no brood; that the workers fill the combs with honey as fast as they are made, and the queen has nowhere to lay eggs. He told me they would die this winter.

4. As I have no cellar, how can I winter my bees safely out-of-doors? SUBSCRIBER.

ANSWERS.—1. One way of preventing too much increase is to do as you did in one case, that is to return the swarm as often as one issues. But that may be more trouble than you like. Here's an easy way to prevent afterswarming: When the prime swarm is hived, set it on the stand of the old colony, setting the old hive close beside it, facing the same way. A week later move the old hive to a new stand 10 feet or more away. That's all; the bees will do the rest. For when the hive is moved to a new stand the bees will go to the fields just the same as if they had not been moved, but when they return, instead of going to their own hive they will return to the old stand and join the swarm. This will so weaken the mother colony that all thoughts of swarming will be given up, especially as no honey will be brought in for a day or two after the change of place. If you want to prevent *all* swarming, that's a more difficult matter. Inform yourself thoroughly by means of such a book as Dadant's Langstroth, and you will be in better position to know what plan is best for you. My book, "Fifty Years Among the Bees," is especially full as to the matter of hindering swarming. But I must confess that I have not been able to prevent all swarming to my entire satisfaction. It may be some help to say that if you succeed in getting a young queen to be reared in a colony and get to laying, that colony is practically certain not to swarm the same season.

2. Nature generally makes bountiful provision against danger of failure. Take an apple tree, one that is thoroughly filled with blossoms. What if every blossom should produce an apple? If there's one apple for every ten blossoms there will be a heavy crop. But if there should be merely enough blossoms for each expected apple, something might happen to a good many of them, and then there would be a shortage in the crop. Same way with the bees. Hundreds of drones are reared for every one needed, so there shall be no lack, and a number of extra young queens are also reared. At the last there may be a duel to settle which one of these young queens shall reign, and that gives you a chance to have the most vigorous one left.

3. If there's a good queen in the hive, don't you worry about there being no brood. But you can easily lift out the frames and see for yourself whether there is brood or not.

4. Every beekeeper needs a good book, such as Dadant's Langstroth, to teach him the principles of beekeeping. This department is not intended to take the place of such a book, but to supplement it, for after you have studied your book carefully there will still be plenty of questions to which you would like answers. All the time there are new members entering the family of the American Bee Journal, and if each of these depended upon getting all his information from these pages, there would be little chance for anything new. For instance, one of the questions pretty sure to come up in the mind of every beginner is whether the old or the young queen goes with the swarm. If all beginners were to depend entirely for their information upon this department, without any bee-book, then that question might happen in nearly every number, and it would become somewhat monotonous. After getting from your book all the information you can about wintering outdoors, any further questions arising upon the subject I shall be glad to answer in this department *if* I know enough. At the same time it may be well to say that if you can find some one in your neighborhood who winters successfully outdoors, it will be a safe thing to follow his plan.

Caucasians or Italians?

1. I have five colonies of black bees which I would like to Italianize. Which would be the best, the golden or leather-colored Italians?
2. Could I keep Italians successfully if black bees are three miles from me, without crossing the two?
3. Which is the best bee, the Italian or the Caucasian?
4. Which winters the best and which gathers the most honey? Which swarms the most and first, and which is the best controlled and gentlest?
5. Is there any book printed that answers any of the above questions? ILLINOIS.

ANSWERS.—1 Generally the leather-colored are preferred.

2. There would be likely to be crossing, but with care you can keep the Italian blood predominant.

3. Most beekeepers prefer the Italian. But Italians are not all alike and neither are Caucasians.

4. I don't know that there's much difference as to wintering; some Italians store more than the average Caucasian, and some Caucasians store more than the average Italian; on the whole, Italians are supposed by most beekeepers to be the better storers; the swarming is a mixed affair, and so is gentleness. Some Caucasians have been reported the most gentle bees in existence, while others have been reported vicious.

5. Dadant's Langstroth will meet your needs; so will Root's A B C and X Y Z.

Preventing Swarms—Entrance Guards

1. Do you use ventilation under supers or open at the top through summer?
2. Do you like to destroy all queen-cells but one or clip the queens' wings for the prevention of swarming?
3. Why not destroy all queen-cells instead of destroying all but one?
4. I tried to put on some supers with started sections, including three or four sections filled with honey in early spring to prevent swarming; but some swarms issued. Why?
5. Is it dangerous to put entrance guards at the bee entrance with ventilation at the top for preventing swarms?
6. Will bees carry lots of honey when bee guards are used at the entrance with ventilation at the top? INDIANA.

ANSWERS.—1. Generally, with section supers, I have ventilation at the back end between the hive and lower super, and sometimes in the cover of the hive as well. In a cool time, however, it is better to have the ventilation closed, for sections at that part are not finished so soon.

2. To prevent a prime swarm, neither one will answer. Destroying not merely all but one, but *all* cells will generally delay swarming, and sometimes prevent it, but too often the bees will swarm in spite of cell killing. Clipping the queen doesn't have the slightest effect in preventing swarming. All it does is to prevent the queen flying with the swarm, and then when the bees find the queen is not with them they return to the hive. But if the beekeeper does not interfere, the bees will swarm just as soon as a young queen is reared.

3. You do destroy all cells when trying to delay or prevent a prime swarm. But when a prime swarm has issued, and you want to prevent an afterswarm by killing cells, you must leave one for a new queen; otherwise the colony would be left entirely queenless.

4. Giving bait sections will generally start work sooner in sections, but that doesn't prevent swarming; only it helps just a little toward prevention.

5. If opening for ventilation is large enough for bees to pass through, entrance guards will have no effect whatever. Neither will entrance guards have any effect in preventing swarming; all they do is to catch the queen when the bees swarm. Of course, when the queen is caught in the guard the swarm will return; but there will be trouble later.

6. It will make no difference as to their carrying in honey.

Swarms Leaving

After being in the hive all right for 1½ days each, two swarms of mine flew away. I had put them on intended permanent stands and soon after they seemed quiet in the hives. Is that wrong? PENNSYLVANIA.

ANSWER.—Better set the swarm on its permanent stand just as soon as it is hived. For a few days give it *abundant* ventilation by raising the cover or shoving it forward, raising the hive by blocks under the corner, or in some way making abundant opening below, shading the hive if not in shade. It's dollars to doughnuts that your bees were too close and warm.

Wintering on Super Combs—Feeding in Fall

1. I ran short of bee-hives and have about five swarms which I hived in a shallow super used for extracted honey. They have 10 shallow frames. I wish to know what you would do with them; unite them with other swarms or let them winter in these supers, and in the spring put them in the regular hive.
2. How would you go about it to put them in the regular 10-frame hive?
3. I use the 10-frame hive, and my bees seem to have plenty of honey every winter. Would you advise me to extract some of the honey and put the empty combs back, or is it best to let them have all the honey?
4. Why is it a good plan to feed the bees in the fall when their hives seem so full of honey? IOWA.

ANSWERS.—1. Unless they are weak and you want to unite them with other weaklings, better leave them to winter as they are.

2. In the spring set the shallow story over the regular hive, which should have frames filled with foundation. When brood appears in the lower story, put a queen excluder between the two stories, making sure that the queen is in the lower story. Eight or ten days later kill any queen-cells that may be in the upper story.

3. Much better leave all the honey. You'll get it back with interest in the harvest.

4. I don't believe it is a good plan.

Bee Martins

Do martins seriously bother bees? If so, would they prove a handicap to a person who is just starting beekeeping in a community where there are a great many of those birds? ILLINOIS.

ANSWER.—I have never heard that martins were seriously troublesome to bees.

A Swarm—Italian Marking

On June 9 a medium-sized swarm was hived for me. On the 14th I moved it to its permanent location. My books say that the supers should always be taken from the old hive and be given to the swarm, as the working force is always there. Not being there when the bees swarmed, and not being the owner of the parent colony, I couldn't do this. On June 29, I opened the hive and found the ten frames of foundation all drawn out and chock-full of honey and brood. I now intend to put on a super of sections with full sheets of foundation, with the hope of securing a little surplus before the flow ceases.

1. What would have been the proper course to pursue under the circumstances?

2. How can I tell whether my bees are hybrids or Italians?

3. Would it be practical or advisable to divide this colony for increase, or is it too late in the season? I can only see them about once a week. Almost all of the bees are 3-banded or leather colored, but I noticed a few that were black and smaller.

PENNSYLVANIA.

ANSWERS.—1. You brought your bees to their permanent location five days after they were hived, and at that time you should have given them the super with a bait section in it. That would be abou the same as giving the super from the patent.

2. If they are Italians they should have three yellow bands, although the band nearest the head does not show very distinctly.

3. Yes, you have time enough to divide, and if there is a fair fall flow you should have two colonies ready for winter.

REPORTS AND EXPERIENCES

Packing in Single-Walled Hives

Why not? It can be done with less expense; for the apiarist it's more convenient, and for the bees it's more advantageous.

(*a*) Less lumber is used, less packing is used for same results, and much less work is used in caring for the same.

(*b*) For spring work, your hives are separate. In locating early in out-yards, you don't have to unpack, and your devices for packing are much more easily handled.

(*c* The bees are placed in a vertical hive instead of a horizontal hive. Bees can move cluster up and down in the hive much more readily than across the combs. The honey is more accessible. In the spring there will be no damp moldy combs at one side of the hive while the bees occupy the other.

How it's done. I use the divisible brood-chamber, *i. e.*, the shallow super 4¾ inches deep. When the work is done in fall I take three such supers, placing six combs in the center of each, six of the heaviest combs at the top, two heavy combs at the sides in the center, filling in the center the best I have left, leaving at the bottom six combs as I find them, thus removing two of the poorer combs from the hive.

APIARY OF CARL H. TUDOR, AT DE KALB, ILL.

I place two ¼-inch division-boards on each side of the bees, throwing over and binding these boards together with burlap. I press my packing material down tight on each side of the bees 2½ inches of packing, put on super, fill same, and we are ready for the ends.

I place cushions on ends made thus: Stick for base 1x1½x16 inches, two sides 1x1x20 for back, 18 inches for front, at top of the 1x1 a slope to ¼ inches is made to come under the cover. These sticks are notched down one-half and nailed together. On the outside tarred paper is used, on the inside burlap, placing my packing between. Then I use baling wire and tie front cushion to back. If well done you have a warmer, a more convenient and a cheaper hive than any double wall hive made.

R. B. DAVIS.

Staunton, Iowa.

Bee Escapes of Wire Cloth

J. E. Crane asks in the American Bee Journal for July, page 231, about bee-escapes made of wire cloth instead of board. I have used this kind of an escape for several years, and with me I think they are as near perfect as possible. I use the Heddon divisible brood-chamber hive, 8 and 12 frame, with top and bottom ¼x13-16 inches. As a matter of course, during a rush of honey, the spaces between excluders and frames are filled with bur combs and more or less honey. When I used boards for escapes sometimes the honey would cover the board so badly the escapes would be clogged so the bees would drown, and in very hot weather they would smother but with the wire-cloth all is dry.

I have never had the Porter escape fail to work with the wire cloth. I take off all my honey from about 500 colonies with them, or the most of it. The old ones I am constantly changing.

I was amused to read the experiences of some of the bee-men moving bees. I am situated along the Sacramento river. I do all my extracting on a barge, rigged with a wire cloth tent, 12x24 inches; an extractor with eight baskets, each basket holding two frames, run with a gas engine. The extractor reverses under full speed. Honey is let down to barge on a track and car. When one yard is extracted I go to the next. If I wish to move the bees, I load up after the bees stop flying at night. I hitch on the gasoline launch and go to the next yard. No fastening in hives; no combs to fasten, only run the hives down on the wheelbarrow and go ahead.

I am rigging the engine that runs the extractor with a drum to wind up the rope to draw the bees and empty combs back to the shore. The only drawback we have is European foulbrood, which has just made its appearance here. American foulbrood having been cleaned out.

A. E. WILBUR.

Broderick, Calif., July 20.

Good Honey Flow

I am a farmer beekeeper helping my father on a large farm. I have 30 colonies of bees, and have now 1300 pounds of extracted honey.

The honey flow is good here this year, but we have too much rainy weather.

Winona, Minn., Aug. 3. J. J. ELLERS.

Too Much Rain

Bees have been storing honey for the past four or five weeks, but there has been too much rain; only about two or three days in a week may be called good honey days.

Hoopeston, Ill., Aug. 2. G. T. WILLIS.

Cleaning Up in DeKalb

Attached is a photograph of Carl H. Tudor's apiary at DeKalb, Ill. This is so well kept that I think some mention of it is necessary. DeKalb has had its scourge of American foulbrood, and has been cleaned up, but it now has one case of European foulbrood in town. There are over 400 colonies kept in the city limits.

J. E. PYLES.

Putnam, Ill., July 28.

Bees Did Fairly Well

My bees have done fairly well through all the rains we have had, and the honey is of a fine quality and white as snow. Some colonies have as high as 70 pounds of fine comb honey, but the flow is slack now and about over. It is mostly sweet clover.

LOUIS WERNER,

Edwardsville, Ill., July 20.

Prospects Spoiled

In Oakland Co., Mich., the prospect for a big crop is spoiled by 13 days of rain up to date, and it is still raining. Two weeks ago the prospects were excellent, with two to four supers of finished comb honey per colony. Bees are still drawing out combs and storing. Rains have brought another clover bloom, but with the temperature ranging from 60 to 75 degrees, and raining nearly every day, bees were not gathering enough to keep up brood-rearing. Feeding is necessary to keep colonies in a condition for the buckwheat flow, which will be on in 10 days.

Buckwheat is plentiful, and we are hoping for favorable weather so the bees can make up for the loss in the clover flow. Farmers are also suffering from the bad weather, with field after field of hay and grain cut and shocked. Oats are pounded flat by the rains. Potato bugs are making a clean sweep over many fields of potatoes, and insects are getting in their bad work on the apples. If the weather becomes favorable there will be a heavy bloom on the second crop of red clover. Sweet clover is carrying the heaviest bloom I ever saw.

W. L. LOVEJOY.

Clarkston, Mich., Aug. 3.

Half a Crop in Nevada

The honey crop is rather poor in the eastern part of Nevada. We had a cold, late spring followed by extremely dry, hot weather. There will be about half a crop.

Halleck, Nev., Aug. 16, J. E. PATTON.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary.
J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

Phelps' Golden Italian Bees are hustlers.

Queens from the Penn Co. See our large ad. elsewhere in this Journal.

---

100 fine Italian queens after Sept 1, 50 cts. each. Tested 75 cts.
P. B. Ramer,
Harmony, Minn.

Vigorous prolific Italian queens, $1.00 each; 6 for $5.00.
A. V. Small,
2302 Agency Road, St. Joseph, Mo.

Golden all-over Queens of Quality. Untested, 75c; tested, $1.50.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

For Sale—Untested Golden Italian queens 60c each, Hybrids, 30c.
J. F. Michael, Winchester, Ind.

For Sale—Bright Italian queens at 55 cts. each, or $6.00 per dozen. Safe arrival and satisfaction guaranteed.
W. W. Talley, Rt. 4, Greenville, Ala,

Italian and Carniolan Queens, the earliest and best to be had of either race. My circular and prices are free.
Grant Anderson, San Benito, Tex.

Italian Queens for sale this season at 60c each; $7 00 per dozen. Ready April 15. Safe arrival guaranteed.
T. J. Talley,
Rt. 3, Greenville, Ala.

Place your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens.
John W. Pharr,
Berclair, Tex.

For Sale—75 colonies of bees in 8 and 10 frame Standard Dovetailed L. hives. A No. 1 condition. J. F, Turpin, Carrollton, Mo.

Queens—The quality kind, 3-band Italians only. Winners at Hartford and Berlin, 1914. Untested, $1.00
A. E. Crandall & Son,
Berlin, Conn.

Quirin's superior improved queens and bees are northern bred, and are hardy. Orders booked now. Over 20 years a breeder. Free circular. H. G. Quirin, Bellevue, Ohio.

My Famous Bright Italian Queens will be 55c each after July 1. Send for price list. Safe arrival and satisfaction guaranteed.
M. Bates, Rt. 4, Greenville, Ala.

Superb Golden and 3 banded queens at $1.00 for one; $7.50 for 12; $32 for 50; $60 per 100. Bees in pound packages in season.
Frank A. Leib, R. F. D. 7, San Jose, Calif.

Italian Queens — Breeders, $2 50, $5.00; and $10. Untested, $1.00 each; six for $5.00, $9.00 per dozen.
Doolittle & Clark,
Marietta, N. Y.

For Sale—About 200 colonies in 10-frame hives; extractor and other necessaries; in good climate and fair location. Write or come and see.
M. B. Bailey, Agt.
Christine, Tex.

Leather-Colored Italian Queens, 70c; untest, 95c; test., 1-frame brood nucleus, $1.25; 2-frame, $1.90; 1-lb. bees, $1.00; 2-lbs, $1.75. Free from disease.
C. H. Cobb, Belleville, Ark.

Choice Queens, Italian, Caucasian or Carniolan. Warranted, 60c each. Tested, $1.00, Breeders, $2 50. Virgins, 40c each, 3 for $1.00.
Stanley & Finch, 1451 Ogden Ave.,
Phone, Haymarket 3384 Chicago, Ill.

Pure Italian Queens—Guaranteed by return mail. One, $1.00; 6, $4.25; 12, $8.00, 50, $32; 100, $60. Also bees by the pound, nuclei and full colonies. Please send for free circular.
J. E. Wing,
155 Schiele Ave., San Jose, Calif.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Italian Queens, also the Golden Beauties and Carniolans. Tested, $1.00. Untested, 75c each. For bees by the pound and queens in lots write for prices. Page Bankston,
Buffalo, Tex.

The Secret of Success is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and $1.00 for tested G. W. Moon.
1004 Adams St., Little Rock, Ark.

Queens, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

Notice—R. A. Shults will sell Italian queens in the season of 1915. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00. Breeders, $5.00. Bred from Moore and Doolittle stock.
R. A. Shults.
R. F. D. 3, Cosby, Tenn.

Queens from my honey-gathering stock, 3 and 5 band Italians. Bred in separate yards. Queens the rest of the season—one, 75c; six, $4.00; 12, $7 00; 25, $13. Safe arrival and satisfaction guarannteed
D. E. Brothers, Attalla, Ala.

For Sale—Improved leather-colored Italian queens, very hardy and bred for business. Select untested, $1 00. Also Golden, Carniolan, and very gentle and hardy Caucasian queens at same price. Virgins, 50c each, or five for $2.00.
F. L. Barber,
Lowville, N. Y.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10.
C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

I can supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed'
I. N. Bankston, Buffalo, Tex.

Hollopeter's Three-band Italian queens must be seen and tried to be fully appreciated for hardiness, honey-gathering, hustlers, etc. Now 90c each. A trial order of six for $3.00. Pound bees with queen, $2 00. Safe arrival and satisfaction guaranteed.
J. B. Hollopeter, Queen-breeder, Pentz, Pa.

For Sale—Golden Italian queens that produce golden bees and good honey gatherers. Tested, $1.00. Select tested, $1 25. Untested, 60c; dozen, $7 00.
D. T. Gaster, Rt. 2, Randleman, N. C.

For Sale Between 60 and 70 colonies o Italian bees on Hoffman frames in good condition and good location, in sunny southern Florida; a house 10x20 feet built in sections, household goods chickens, etc., at reasonable price. Bees make honey in winter. Reason for selling, too old
Address, P. O. Box 217, Fort Lauderdale, Fla.

Gray Caucasians—Their superior qualities are early breeding; great honey gatherers; cap beautifully white; very prolific; very gentle; great comb builders; not much inclined to swarm; give better body to honey; not much inclined to rob; very hardy; never furious; good winterers; everywhere the best all-purposed bee. Give me a trial order for a queen or nucleus. Prices on application.
J. J. Wilder,
Cordele, Ga

For Sale—Queens, three-band Italians Extra good strain. Their bees are great hustlers. Only drones from selected queens near mating yard. Untested, one, $1.00; 6 for $4 50; 12, $8 00. Ready June 15. When ordering, state time within which queens are wanted. They will be mailed promptly or money returned.
D. G Little,
Hartley, Iowa.

For Sale—Three-banded Italian queens from the best honey-gathering strains, that are hardy and gentle. Untested queens, 75c; 6, $4 25; 12, $8 00. Tested queens, $1.25; 6, $7.00; 12, $12. Selected queens, add 25c each to above prices, Breeding queens, $3 00 to $5.00 each. For queens in larger quantities, write for prices and circulars.
Robert B. Spicer, Wharton, N. J.

HONEY AND BEESWAX

Wanted—Comb, extracted honey, and beeswax.
R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale—White extracted honey, 7c; amber, 6c; two 60-pound cans to case. Well ripened and mild flavored.
H. G. Quirin, Bellevue, Ohio.

We are looking for a good party to ship us A No. 1 honey. Please state prices in light and dark. Address,
Emil Strudle,
1393 12th St., Milwaukee, Wis.

For Sale—Fancy extracted honey, sweet clover, at 7c by the case. Also 5 lb. F. T. buckets at $5.00 per case of 60-lbs, Send cash. Virgil Weaver, Falmouth, Ky.

For Sale—Raspberry, Basswood, No. 1 white comb, $3 00 per case; fancy, 3.25; 24 Danz. sections to case; 6 to 9 cases to carrier. W. A. Latshaw Co., Clarion, Mich.

For Sale—Light extracted honey, clover and basswood blend, in any style packages. Write for prices. Sample, 10 cents, which may apply on order.
M C. Silsbee.
R. F. D. 3, Cohocton, N. Y.

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For Sale—I. H. C. Truck in fine condition and running order. Will sell at a bargain; have no use for it. Address,
L. Werner, Edwardsville, Ill.

HONEY LABELS

Honey Labels and Printing Catalog free
Liberty Pub. Co., Sta. D, Box 4H, Cleveland, O

SUPPLIES.

I want second-hand Woodman PROTECTION hives. Quote prices.
Hives, care A. B. J.

For Sale—I am selling foundation and paying the freight to your station anywhere in La. Root's goods for sale. Send me your orders. Am paying 28c cash for wax or 30c in trade delivered here.
J. F. Archdekin, Big Bend, La.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

FOR SALE—Friction-top pails, 5-lb. size per 100, $4 50; 10-lb. size, $6 25 per 100; 60-lb. cans, two in a case, 10 cases or more, 60c; 25 cases, 59c; 50 cases or more, 58c per case. All f. o. b. Chicago.
A. G. Woodman Co.,
Grand Rapids, Mich.

STANDARD DOVETAILED HIVES shipped direct from factory in Iowa. Five 8 frame for $6 00. Hoffman frames, $2.75 per hundred. Plain sections, $4.20 per M. Write for prices on what you need—a full line. Queens, 50c each. Write for large lots in July, August.
The Stover Apiaries, Mayhew, Miss.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap.
White Mfg. Co.,
4Atf Greenville, Tex.

Pennsylvanis Field Meet

The Pennsylvania State Beekeepers' Association will hold a field meet at the apiary of Chas. C. Wright, of Aldan, Delaware Co., near Philadelphia, on Saturday, Sept. 11, beginning at 10 a.m. Demonstrations and Talks will be given by prominent bee men. An interesting program is prepared. Everybody is invited. Take cars in Philadelphia to 69th Street terminal, change to Collingdale and get off at Aldan,

H. C. KLINGER, *Sec.*, Liverpool Pa.
DR. H. A. SURFACE, *Pres.* Harrisburg.

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Best Sections, Best Shipping Cases

Best of all Supplies

Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready now. Send your name and get one.

H. S. DUBY & SON, St. Anne, Ill., carry a full line of our goods.

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Fine Italian Queens

Select 3 and 5 banded stock; gentle, hardy and prolific honey gatherers. No disease. Price, 1 to 3, $1.00 each; 4 to 6, 90c each. Larger quantity, $10 per doz. Prompt deliveries. Pure mates. Safe arrival and absolute satisfaction guaranteed. Send me a trial order.

CHAS. M. DARROW
Star Route, - Milo, Mo.

Help Advertise Honey

—By putting—

EAT HONEY

Stickers on all letters, packages, shipments, etc. Printed in bright red, already gummed. Price, postpaid, 500, 20c; 1000, 30c.

The "Booster's Club" is Not for "Dead Ones"

You are cordially invited to join the **"BOOSTER'S CLUB"** so that you may assist in a uniform, happy, broad-minded, intelligent and persistent movement to extend the use and push the sale of **honey**. Your **own** honey first, **all** honey incidentally.

Our members will advise one another of their successes and failures—plan new uses for honey—devise efficient selling schemes for advertising it, and support them. We will applaud when we like, kick when we feel disposed, suggest what appeals, and all smile together as we gather in the extra **money** dividends that are bound to accrue from the boosting.

The **BOOSTER** will carry this message to every member each month. Every number will feature good and efficient selling schemes. You will want them all. Wrap a quarter in paper and enclose it with your name and address, **at our risk**, for one year's subscription. $1.00 for five years.

GEO. W. WILLIAMS, Redkey, Indiana

HONEY WANTED

We will need several carloads of extracted honey. In offering your honey, be sure to send sample that will show true body, color and flavor. Also quote your lowest price, f. o. b. your shipping point in your first letter, and state when gathered.

All honey should be in new cans and cases, properly marked and graded according to standard rules. Best grades will have preference. All cans must contain 60 lbs. net.

DADANT & SONS, Hamilton, Ill.

CLOSING OUT SALE

—OF—

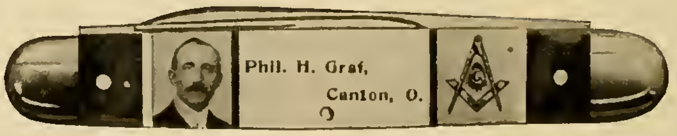
BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.35
Danzenbaker Bee-Smoker ($1.00)	.80

GEORGE W. YORK, SANDPOINT, IDAHO

BEE-KEEPER'S NOVELTY POCKET-KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

American Bee Journal

NOW IS THE TIME TO REQUEEN

Now is the time to get ready for next year. If you are just taking off a big crop of honey, your queens will be more or less worn out by their enormous egg production, and will profit by being replaced in many instances.

Possibly you look for a big crop next year. Now is is the time, then, to weed out your poor stock, your black stock, or your older queens. You should have young and vigorous queens to start the season next year.

Under any circumstances, weed out your poor stock.

We are in a position to furnish pure stock, either leather colored, three-band, or golden, as you prefer, in very short order and at reasonable prices, and guartee safe arrival and pure stock.

Our prices for the balance of the season are as follows:

Pure Italian Stock

1	Untested	$ 1.00
6	"	4.50
12	"	8.50
25	"	16.50

Tested queens, $1.50 each.

Prices on larger lots on application.

AMERICAN BEE JOURNAL

Hamilton, Illinois

TENNESSEE-BRED QUEENS

43 Years' Experience in Queen Rearing—Breed 3-Band Italians Only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested........	$1.50	$7.50	$13 50	$1.25	$ 6.50	$11 50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ .75
Select Untested	2.00	8 50	15.00	1.50	7 50	13 50	1.25	6.50	12.00	1.00	5.00	9.00
Tested...........	2.50	13 50	25.00	2.00	10 50	18 50	1.75	9 00	17.00	1.50	8 00	15.00
Select Tested..	3.00	16 50	30.00	2.75	15.00	27.00	2 50	13.50	25 00	2.00	10.00	18.00

Bees by the pound, 1 lb., $1 25; 2 lb., $2.25; 3 lb., $2.75.
Nuclei (no queen) 1 fr. $1.50; 2 fr., $2.15; 3 fr. $2.75; 4 fr., $3 50; pure 3-band Italians.
Select queen wanted, add price.

Capacity of yard, 5000 queens a year—Select queen tested for breeding, $5.00
The very best queen tested for breeding, $10

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

JOHN M. DAVIS, SPRING HILL, TENN.

Books for Beekeepers

Address the

AMERICAN BEE JOURNAL
HAMILTON, ILLINOIS

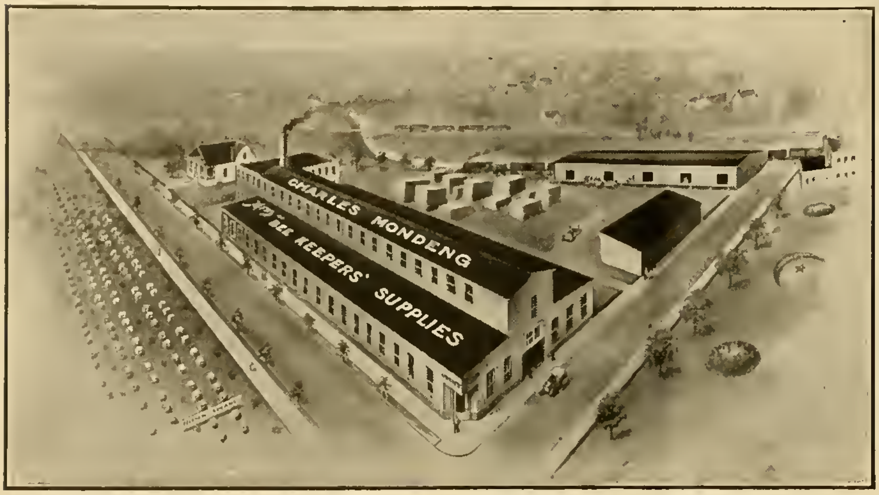
Pearce Method of Beekeeping.—This is an illustrated booklet explaining the keeping of bees in house attics or lofts, whereby any one, either in city or country, is enabled with only a small expenditure of labor to get a lot of honey without coming in contact with the bees. The methods are all fully explained. Price, 50 cents; or with the American Bee Journal one year, both for $1.25.

Advanced Bee Culture,—A new edition of this book by the late W. Z. Hutchinson, of Michigan, is a practical and up-to-date bee book for the specialist beekeeper. Its 200 pages touch on subjects pertaining to modern beekeeping, and all are discussed with the authority of an expert. The book has many beautiful illustrations. It is cloth bound, with a cover design in natural colors on its cover. Price, postpaid, $1 00; or with the American Bee Journal one year, both for $1.75

A Year's Work in an Out-Apiary. This is a booklet by G M. Doolittle, the well known honey producer of New York State. He tells how he secured an average of 114½ pounds of honey per colony in a poor season. It is fully illustrated, and tells in detail just how Mr. Doolittle has won his great success as a honey producer. Price, postpaid, 50 cents; or with the American Bee Journal one year, both for $1 25. Every beekeeper should have a copy of this booklet and study it thoroughly.

Langstroth on the Honey Bee—Revised by Dadant. The classic in bee culture. A 575 page cloth bound bee book brought up-to-date. It is an authority, and is used as a text book in many schools and colleges. Finely illustrated and well indexed. It is a book which should be in the hands of every beekeeper, large or small. Chapters are devoted to all important bee subjects from bee-anatomy to diseases and honey production and marketing. Price, postpaid, $1 25, or with American Bee Journal one year, both only $1 75. French edition of this book, price, postpaid, $1.50. Spanish edition, postpaid, $1.65

Scientific Queen Rearing.—This is practically the only complete book on queen rearing now in print. It is looked upon by many as the foundation of modern methods of rearing queens in a wholesale way. G. M. Doolittle, its author, has an entertaining way of writing on bee subjects which helps his readers to follow him with pleasure even if they never intend to rear queens at all. He describes just how the best queen can be reared in nature's way. Cloth bound, 124 pages, 75 cents, postpaid. There is also a leatherette-bound edition of the same book which retails at 50 cents, or with the American Bee Journal, both for $1.00.



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Thousands of Hives, the best ever made of white pine lumber, ready for prompt shipment. Don't miss them. My goods are guaranteed. A trial order will prove it. 200 colonies of Adels and Carniolans. If you want a square deal, send for my Catalog and Price List. I will pay highest market price for Beeswax in trade.

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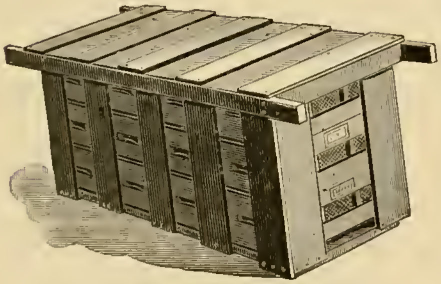
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Manner of Packing Glass Jars

Will enhance the value of your honey and assure you a ready market and the highest possible prices.

Our "Safety" shipping cases will insure safe arrival of your comb honey and thus enable you to reap the benefits of your labor. Cheap and poorly made shipping cases are, indeed, a "penny wise and a pound foolish" policy. We also carry a large assortment of tin and glass honey packages for extracted honey. Our printing department is prepared to furnish neat and attractive looking cartons for comb honey and honey labels at reasonable prices. Ask for our honey label catalog with samples and prices.

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CEDAR WOOD

Hive bodies, 8 or 10 frame, 25c each. Covers and bottoms, prices upon application. Falcon Foundation and Bee Supplies.

FROFALCON QUEENS

Everything for the beekeeper. Address.
J. C. Frohliger, Berkeley, Calif.
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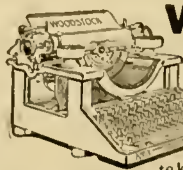
Without a supply of Allen's Foot-Ease, the antiseptic powder to be Shaken into the Shoes, or dissolved in the foot-bath. The Standard Remedy for the feet for 25 years. It gives instant relief to tired, aching feet and prevents swollen, hot feet. One lady writes: "I enjoyed every minute of my stay at the Expositions, thanks to Allen's Foot-Ease in my shoes." Get it TO-DAY.



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We manufacture Millions of **Sections** every year that are as good as the best. **The CHEAPEST** for the Quality ; **BEST** for the Price. If you buy them once, you will buy again.

We also manufacture **Hives, Brood-Frames, Section-Holders and Shipping-Cases.**
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Beekeepers' Supplies

Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description, Shipping-cases, Section-holders, Comb-foundation, Smokers, etc.

Get my prices before placing your orders.

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START THE SEASON RIGHT

By using **Dittmer Foundation** the bees like it for it's made to just suit them, and is just like the Natural Comb they make themselves.

Send for prices on having your Beeswax made into Comb Foundation, which includes all freight charges being paid.

All other Supplies in stock

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For sale by all dealers.
If no dealer, write factory
R. & E. C. PORTER, MFRS.
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Please mention Am. Bee Journal when writing

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Send One dollar and have the magazine sent for one year. Cut rate of one-half price now on.

Three-Banded Italians

GET THE BEST

Twenty years selection and breeding brings Murry's Queens above the average Untested, 75c; 6, $4 00; 12, $7.50. Tested, one, $1.00; 6, $5.00; 12, $10. Select tested, one, $1.50; 6, $8.00; 12, $15.

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Write us for our 64-page catalog. FREE. Full information given to all inquiries. Let us hear from you. We handle the best make of supplies for the beekeeper. Beeswax exchanged for supplies or cash.

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High Hill, Montg. Co., Mo.

QUEENS OF MOORE'S STRAIN OF ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.
Untested queens. $1.00; 6, $5 00; 12, $9.00
Select untested, $1.25; 6 $6.00; 12, $11,00
Safe arrival and satisfaction guaranteed. Circular free. I am now filling orders by return mail.

J. P. MOORE,
Queen-breeder Rt. 1, Morgan, Ky.

Miller's Strain Italian Queens

By RETURN mail after June 5th to 10th, or money refunded. Bred from best RED-CLOVER strains in the U. S. In full colonies from my SUPERIOR BREEDERS; northern bred for business; long tongued, three banded, gentle, winter well, hustlers, not inclined to swarm; roll honey in. One untested, 75c; 6, $4 00; 12, $7.50. One select untested, $1.00; 6, $5.00; 12, $9 00. A specialist of 18 years' experience. Safe arrival and satisfaction guaranteed.

I. F. MILLER, Brookville. Pennsylvania

Make Hay While the Sun is Shining

Gather your honey crop while there is a chance. If you are in need of supers, sections, comb foundation, frames, etc., write or wire us, and we will send your order out the same day.

We carry a large stock, and can fill any and all orders at once and without delay **Root's Goods** are synonymous with perfect workmanship, the best of raw materials, and **Weber Service** means attention to details and prompt shipments. Save freight. Order from us.

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Cappings or slumgum is a "mussy" job at best. We are equipped for this work, and will render yours for you on shares. Send for our terms. For your share of the wax we will either pay you cash, ship you goods in exchange or manufacture it into

Dadant's Foundation

Known and liked the world over because it is just like the combs the bees make themselves.

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We carry a large stock of all kinds of bee supplies. Drop us a card, making known your wants. We guarantee satisfaction in every way.

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HAMILTON, ILLINOIS.

AMERICAN BEE JOURNAL

OCTOBER, 1915

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Apr-20

AMERICAN
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA
BEE JOURNAL

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec15" on your label shows that it is paid to the end of December, 1915.

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Nothing less than 5 lines accepted.

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3 times 14c a line 9 times 11c a line
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Reading Notices, 25 cents, count line. Goes to press the 23d of the preceding month.

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We know we can satisfy you on quality.
Write for catalog.

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Dept. S., Kansas City, Mo.

Wanted

Choice Grades of
EXTRACTED HONEY

Send Sample and State Quantity

How packed and the lowest price you will take

We are always in the market for **Beeswax**, and pay highest market prices.

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MARZ STRAIN OF ITALIANS

A distinctive strain of honey gatherers, with fixed characteristics, the result of 25 years careful breeding.

Untested queens	$ 1.00
Tested queens	2.00
Breeding queens	10.00

Write for circular.

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IN the Province of Ontario alone there are 11,000 persons producing honey. A very conservative calculation means that there are 50,000 Queens. If you have Queens to sell to Canadian bee men, say so in The Canadian Horticulturist and Beekeeper, the only bee publication in Canada. It is the official organ of the Ontario and New Brunswick Beekeepers' Associations.

Classified rate 3 cents per word—each single number and sign counting as one word. Cash in advance.

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The European war is doubling the demand for American farm products. We can increase our acreage but this will not meet the demand—we must increase our yields per acre We must do better farming, not only in the East and Middle West, but in the great grain raising territory west of the Missouri River.

Everybody knows that by following the Campbell System of Soil Culture, crop yields have been doubled in every State of the Union from New York to California. Why not learn what the principles of the Campbell System are and adopt them? You can get all this and a thorough agricultural education without leaving home by taking a course in the

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You can have your choice of eight courses, Soil Tillage, Soil Improvement, Small Farming, Horticulture, Irrigation, Dry Farming, Farm Engineering and Animal Husbandry, all for a nominal tuition fee, no board to pay, no books to buy, everything furnished, and you can use your spare time while still running your farm or holding your job.

We cannot tell you all about these courses, the faculty and the free bureau of advice in this ad, but we will be glad to send you full information at any time. Write and ask for our free catalog No. 3, and a sample copy of the Scientific Farmer.

Campbell Scientific Soil Culture Company Billings, Montana

We are in the Market

To buy both Comb and Extracted honey. Write us what you have to offer, naming your best prices delivered Every time an interesting price is named us, we buy and remit the day shipment arrives.

SHIP US YOUR OLD COMB

We render it into wax, and pay the market prices.

THE FRED W. MUTH COMPANY
204 WALNUT STREET "The Busy Bee Men" CINCINNATI, OHIO

TEXAS QUEENS

Italians, the pure three-banded stock from imported mothers. Carniolans, the pure dark grey stock from Carniola. Queens will be ready to ship early in March. No disease. Prices, 75 cents each. $8.00 per dozen.

Circular free

Grant Anderson, San Benito, Tex.

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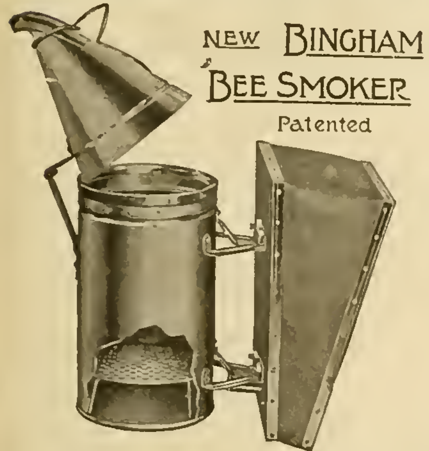
Send in your subscription to **The Leghorn Journal** and keep posted on the progress of the Leghorn industry; as it is devoted exclusively to the different Leghorn fowls. Subscription price 50c per year. Special offer—Send us 10c and the names of five of your neighbors interested in Leghorns, and we will send you The Leghorn Journal for three months.

THE LEGHORN JOURNAL
Appomattox, Virginia

Bingham Bee Smokers and Uncapping Knives



Have been on the market nearly 40 years, and are the standard in this and many foreign countries. Insist on the genuine improved articles from your dealer or direct from manufacturers.

Postage extra		ship. wt.	Price
Smoke Engine,	4 inch,	28 oz.	$1.25
Doctor	3½ "	26 oz.	.85
Conqueror	3 "	23 oz.	.75
Little Wonder	2½ "	16 oz.	.50
Smoke Engine or Doctor in copper 50c extra			
Uncapping Knives, improved Cold Handle			
Stan'd Length	8½ "	20 oz.	.75
Extra long	10 "	24 oz.	.85
Steam Heated 3 feet tubing		36 oz.	2.50

Friction-top pails, 5 lb., size per 100, $4.50; 10-lb. size per 100, $6.25; 60-lb. cans two in a case, 10-case lots, 60c; 25-case lots, 59c; 50-case lots, 58c per case, f. o. b. Chicago. State quantity wanted and get our shipping case prices.

Woodman's double-wall Protection Hives, single-wall hives, Good enough Brand Sections, shipping cases, foundation, and all supplies. Send us a list of the goods wanted and let us figure on your 1916 requirements.

A. G. WOODMAN CO., Grand Rapids, Mich.

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We are in position to fill your orders for queens and bees from date of this "Journal" until October 1, 1915, at following prices:

Prices of one and over	1	6	12
Virgins	$ .50	$2 75	$ 5 00
Untested	.85	4.50	8.00
Select untested	1.00	5.00	9.00
Warranted	1 10	5.50	0.50
Tested	1.50	7 50	13.50
Select tested	1.75	9.00	15.00
Tested breeding	3.00		
Select tested breeding	5.00		
Ex. select test. breeding	7.50		

1 frame nuclei without queen	$1.50
2 frame nuclei without queen	2.75
3 frame nuclei without queen	3.50
Colony 8-frame hive without queen	7.50
Colony 10-frame Danz, without queen	0.50
Colony 10-frame hive without queen	9.50

When queens are wanted with nuclei and colonies, add queens at prices as above for queens.

Bees by Pound F. O. B. Penn., Miss.

½-pound package, wire cage	$1.00
1-pound package, wire cage	1.50
2-pound package, wire cage	2.00

No queen supplied at these prices. Make selection and add to above prices.

All bees and queens shipped from our yards at Penn, Miss. We have no disease, nor do we know of any diseased bees in this State. Our queens are bred from highly selected stock of uniformly marked bees; for gentleness and working qualities they are unsurpassed; they are world-beaters as honey-gatherers. We consider these queens the equal of any on the market, and years of favorable reports substantiate this claim. In ordering you have the choice of selecting three-banders or goldens. Prompt attention given to all orders and inquiries. Read The A. I. Root Company's endorsement below.

MEDINA, OHIO, February 6, 1914.

THE PENN CO., Penn, Miss.

Gentlemen:—Replying to yours of February 3, we would state that we have bought a large number of queens of you. We have found them uniformly marked, and of a good stock; in fact, they are first-class in every respect. Another thing, we have always found that you make prompt deliveries, or give us notice promptly when such deliveries could not be made.

THE A. I. ROOT COMPANY,
Per E. R. Root, Vice-president.

Our record last year, about 10,000 queens, and shipments to all important foreign countries; every State in United States and Canada, and only two complaints, which we readily made good. Try us. We are sure to please you.

Our QUEENS all around the world. The sun never sets on a Penn Co.'s queen.

THE PENN COMPANY, Penn, Lowndes County, Mississippi

Representatives of The A. I. Root Company, and Queen Specialists.

Honey Jars

No. 25 screw cap jars, 1-lb., $4.60 gross. Shipping cases, cartons and cans. Amber honey, 7½ cts. a lb. Light amber 8½ cts. a lb. on two 60-lb. can lots. Catalog of supplies free. I. J. STRINGHAM,
105 Park Place, N. Y.
APIARIES: Glen Cove, L. I.

OUR VERY BEST IS THE VERY BEST

BEE SUPPLIES

Best Sections, Best Shipping Cases

Best of all Supplies

Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready now. Send your name and get one.

H. S. DUBY & SON, St. Anne, Ill., carry a full line of our goods.

AUG. LOTZ CO. BOYD, WIS.

HONEY AND QUEENS

$16.00	Gets 32 gallon barrel of Chinquapin honey.
$20.00	Gets same amount either poplar or black tupelo gum honey.
$19.20	Gets carriers of eight 24 lb cases; fancy, 12½ oz., and better light amber comb honey.
$18.00	Gets same amount and quality, 11 ounce sections
$16.50	Same amount, 10 ounces, lighter weight, 10c per pound.
$ 5.00	Tested grey Caucasian queens; best stock $1.50 each.

J. J. WILDER, Cordele, Georgia

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ARTISTS
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230-231 N. 5th Ave., Chicago, Illinois

WESTERN BEE-KEEPERS can save honey and get the best goods obtainable, especially made to meet Western condition. Send for new catalog and special price list to

Colorado Honey-Producers' Association
Denver, Colorado

ITALIAN QUEENS NORTHERN BRED

The cold season makes one think where we are going to get the hardy, northern-bred queens? Untested, $1.00; select tested, $1.50.

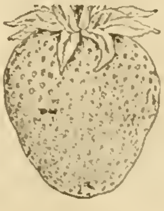
E. E. MOTT, GLENWOOD, MICH.

Help Advertise Honey

—By putting—

EAT HONEY

Stickers on all letters, packages, shipments, etc. Printed in bright red, already gummed. Price, postpaid, 500, 20c; 1000, 30c.



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PROTECT YOUR BEES AGAINST FOULBROOD

By using "falcon" queens

One of the prominent beekeepers of New York State writes:

"The queens received from you this season have been perfectly satisfactory. For cleaning up foulbrood they cannot be beat. We could not ask for any better queens, and I have not heard any fault found from parties I have sold to."

Can you afford to run the chance of letting foulbrood invade your apiary when "Falcon" Italian queens are no more expensive than the ordinary blacks and hybrids which oftentimes cause a catastrophe in an apiary by being so susceptible to foulbrood.

PRICES OF "FALCON" QUEENS—THREE-BANDED ITALIANS, GOLDEN ITALIAN AND CARNIOLANS

After July 1	1	6	12	After July 1	1	6	12
Untested	$ .90	$5.00	$ 9.00	Tested	$1.50	$ 8.00	$15.00
Select untested	1.00	5.50	10.00	Select tested	2.00	10.00	18 00

SAFE ARRIVAL AND SATISFACTION GUARANTEED DEALERS EVERYWHERE

RED CATALOG, Postpaid - "Simplifed Beekeeping," Postpaid

W. T. Falconer Mfg. Co., Falconer, New York

Where the good bee-hives come from

GOLDEN ITALIAN QUEENS

Mr. Beekeeper, do you want the best queens that money can buy? If so, try this strain of Goldens that for fifteen years has been a leader. All queens reared from superior Golden mothers and mated with select Golden drones; are large, vigorous and prolific; the bees gentle and hustlers, and are noted throughout the United States as a disease-resisting strain. Mated from strong nuclei, three to five full Langstroth frames. No disease. Safe arrival (U. S. and Can.), purity of mating and satisfaction guaranteed. Write for descriptive circular.

PRICES OF QUEENS

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1.50	$ 7.50	$13.50	$1.25	$ 6.50	$11,50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6,50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	11.00	18.00

Breeders, $5.00 to $25.

BEN G. DAVIS, Spring Hill, Tennessee

Please mention Am. Bee Journal when writing.

Quality Hill Queens

"The Queens You'll Eventually Buy"

Quality Hill Queens are of a famous strain, greatly improved. All cells are built in 10-frame colonies, brimful of bees, and during a continuous honey flow. For hardiness, gentleness and honey gathering qualities, they are better than most. Four frame nuclei used for mating. Many report them very resistent to European Foulbrood. No disease. Italians.

Our Guarantee—All queens will reach you alive, in good condition, purely mated, and will give satisfaction. Queens which prove to be injured in the mails will be replaced if returned. Reference, Plainfield, Ill., State Bank.

	1	6	12		1	6	12
Untested	$ .80	$4.00	$7.50	Tested	$1.50	8.00	$15 00
Select unested	1.00	5.00	0.00	Select tested	2.50	10,00	18.00

Breeders $4.00 up

K. E. HAWKINS, Plainfield, Illinois

BARNES' Foot-Power Machinery

Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it." Catalog & price-list free

W. F. & JOHN BARNES
995 Ruby St., ROCKFORD, ILLINOIS.

SHIPPING CASES

We have them and sell at the old price. Send us a list of what you want or send for catalog of the best and cheapest bee supplies of all kinds.

H. S. DUBY & SON, St. Anne, Ill.

HONEY AND BEESWAX

CHICAGO, Sept. 15.—Comb honey has been arriving freely of late and prices are really weaker owing to the absence of free buying on the part of retailers who are holding off for cooler weather. However, some of the receivers feel they must sell very soon after it arrives, and consequently selling at lower prices than are quoted herein. The market on A No. 1 to fancy grades 17@18c per pound with sales chiefly at 17c; No. 1 at 16c per pound, with amber grades ranging from 13@15c per pound. That which has not been built with separators and is undesirable because of mixed colors and pollen scattered through the comb sells at from 9@12c per pound.

Extracted is also arriving freely with very little demand. Prices ranging for white from 7@9c per pound, according to kind, package and quality with the ambers from 5@7c per pound. Beeswax is dull at 28@30c per pound, with stocks accumulating.

R. A. BURNETT & CO.

CINCINNATI, Sept. 13.—The demand for honey is better than it was some time ago. We are selling fancy and No. 1 comb honey for $3.25 to $3.75 per case. Amber comb honey is hard to sell at any price, and we discourage the shipments of this in our market. For the best white extracted honey in crates of two 60 pound cans we are getting from 7½@9c a pound, for amber honey in barrels 4½@6½c, according to the quantity and quality purchased. For choice bright yellow beeswax that is free from dirt we are paying 28c a pound delivered here.

THE FRED W. MUTH CO.

NEW YORK, Sept. 18.—The new crop of comb honey is rather slow in arriving; still there is not a very heavy demand as yet, probably due to the intense hot weather of late. Prices are ruling at from 15@16c per pound for fancy white; 13@14c per pound for No. 1; 10@12c per pound for off grades. The market on extracted is quiet and inactive; there seems to be an abundant supply of clover and linden as well as California sage and alfalfa. West Indian honey is arriving right along with prices showing a downward tendency.

Beeswax is coming in steadily at from 30@31c per pound.

HILDRETH & SEGELKEN.

DENVER, Sept. 18.—The first of the new crop of comb honey is now coming in and sells locally at the following prices per case of 24 sections: Fancy, $3.60; No. 1, $3.38, and No. 2, $3.15. Crop promises to be light. Local prices on extracted unchanged. White, 8½@8¾c; light amber, 8@8¼c; amber, 7@8c. We pay 25c cash and 27c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

KANSAS CITY, MO., Sept. 15.—Not much change to report on our honey market. New crop of extracted is beginning to arrive. The demand is light. The receipts of comb are liberal and the demand is fair. We quote as follows: No 1 white comb honey, 24 section cases, $3.25 to $3.35; No. 2, $2.75 to $3.00. No. 1 amber, 3.00 to $3.25; No. 2, $2.50 to $2.75. Extracted, white, per pound, 7@7½c. No. 2 amber, 5½@7c. Beeswax, 25@28c.

C. C. CLEMONS PRODUCE COMPANY.

LOS ANGELES, Sept. 21.—The California honey market is as follows: Water-white sage, 6c; white sage, 5½c; light amber sage, 4c. Extracted honey is in good supply. Comb honey stocks are fairly good. The market is about $2.75 per case for No. 1 white. Beeswax market is 25c.

HAMILTON & MENDERSON.

INDIANAPOLIS, Sept. 17.—Shipments of comb honey are arriving quite freely, and selling as fast as it arrives. Extracted honey has been coming in from all directions, and the demand for good quality is quite brisk. We are selling white comb at $3.50 to $4.00 per case, the quality being excellent. Prices on extracted range from 9@11c.

We are allowing 28c cash or 30c in trade for good average beeswax delivered here.

WALTER S. POUDER

Attractive Prices
ON TIN HONEY CONTAINERS

Just now there is a heavy demand for tin honey containers in Illinois and adjoining territory. A heavy fall honey flow is on. If you need cans or pails write us. We have secured cans at such figures that we can surely save you money.

Write us your *requirements* and we will give you our best prices

DADANT & SONS
Hamilton, Illinois

Grading Rules of the Colorado Honey-Producers' Association, Denver, Colo., Adopted Feb. 6, 1915.

(All honey sold through the Colorado Honey Producers' Association must be graded by these rules.)

COMB HONEY.

FANCY.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, comb and cappings white, or slightly off color. Combs not projecting beyond the wood, sections to be well cleaned. No section in this grade to weigh less than 12½ ounces net or 13½ ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 12½ ounces."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NO. 1.—Sections to be well filled, combs firmly attached, not projecting beyond the wood and entirely capped, except the outside row next to the wood. Honey, comb and cappings from white to light amber in color. Sections to be cleaned. No section in this grade to weigh less than 11 ounces net or 12 ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 11 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NO. 2.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 ounces net or 11 ounces gross. Also of such sections that weigh 11 ounces net or 12 ounces gross, or more, and have not more than 50 uncapped cells altogether, which must be filled with honey. Honey, comb and cappings from white to amber in color. Sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

COMB HONEY THAT IS NOT PERMITTED IN SHIPPING GRADES.

Honey packed in second hand cases.

Honey in badly stained or mildewed sections.

Honey showing signs of granulation.

Leaking, injured or patched up sections.

Sections containing honey-dew.

Sections with more than 50 uncapped cells or a less number of empty cells.

Sections weighing less than the minimum weight.

All of such honey should be disposed of in the home market.

EXTRACTED HONEY

Must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained and packed in new cans, 60 pounds shall be packed in each 5 gallon can, and the top of each 5-gallon can shall be stamped or labeled, "Net weight not less than 60 pounds."

Extracted honey is classed as white, light amber and amber, the letters "W," "L. A.," "A." should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new, substantial cases of proper size.

STRAINED HONEY

Must be well ripened, weighing not less than 12 pounds per gallon. It must be well strained, and if packed in 5-gallon cans each can shall contain 60 pounds. The top of each 5-gallon can shall be stamped or labeled "Net weight not less than 60 pounds." Bright clean cans that previously contained honey may be used for strained honey.

HONEY NOT PERMITTED IN SHIPPING GRADES.

Extracted honey packed in second-hand cans.

Unripe or fermenting honey, weighing less than 12 pounds per gallon.

Honey contaminated by excessive use of smoke.

Honey not properly strained.

Honey contaminated by honey-dew.

MORE MONEY FOR YOUR HONEY

WHEN PACKED IN

LEWIS SUPERB SHIPPING CASES

After you have harvested a nice lot of comb honey do not make a serious mistake by putting it up ready for the market in a cheap appearing case such as a home-made one or that turned out by a local planing mill. The best and most economical (taking the sale of the honey into consideration) case must be turned out with the same careful workmanship and with the same selection of proper material as goes into the making of first-class bee hives and honey sections such as we manufacture.

It is an acknowledged fact that comb honey put up in attractive Lewis Shipping Cases will bring from one to two cents per pound more than the same honey put up in poor cases. Do not cheapen your product by inferior cases. You can afford the best—remember your shipping cases are the show windows for your goods. Your honey will bring more money if well displayed.

INSIST ON THE LEWIS MAKE

Lewis Shipping Cases are cut accurately out of clear, sound basswood lumber. All of these cases are neatly packed, and include the proper size nails for nailing them up.

For sale by us and the following Lewis distributers:

CALIFORNIA	W. A. Trickey	Bishop
COLORADO	Colorado Honey Producers' Association	Denver
COLORADO	Grand Junction Fruit Growers' Association	Grand Junction
COLORADO	Delta County Fruit Growers' Association	Delta
COLORADO	Producers' Association	De Beque
COLORADO	A. S. Parson	Rocky Ford
COLORADO	Coffin & Foster	Rifle
COLORADO	J. Roscoe Miller	Montrose
GEORGIA	J. J. Wilder	Cordele
IDAHO	City Grain & Poultry Co	Nampa
ILLINOIS	Dadant & Sons	Hamilton
IOWA	Louis Hanssen's Sons	Davenport
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IOWA	H. J. Pfiffner	Emmetsburg
MICHIGAN	A. G. Woodman Co	Grand Rapids
NEW MEXICO	C. F. Reynolds	Artesia
NEW MEXICO	H. H. Brown	La Plata
NEVADA	H. Trickey	Reno
OHIO	Fred W. Muth Co	Cincinnati
OREGON	Chas. H. Lilly Co	Portland
TENNESSEE	Otto Schwill & Co	Memphis
TEXAS	Southwestern Bee Company	San Antonio
UTAH	Foulger & Sons	Ogden
WASHINGTON	Chas. H. Lilly Co	Seattle
PORTO RICO	Fritze, Lundt & Co. S	Ponce
ENGLAND	E. H. Taylor	Welwyn

G. B. LEWIS COMPANY

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Watertown, - Wisconsin

AMERICAN BEE JOURNAL

(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., OCTOBER, 1915

Vol. LV.—No. 10

EDITORIAL COMMENTS

Wilmon Newell to Florida

After several years as State Entomologist for Texas, Wilmon Newell, well known to most of our readers, has accepted the position of State Plant Commissioner for Florida.

This means that Mr. Newell is giving up for the present his work with the bees to become plant commissioner. We feel very sure, however, that he will not, in any case, lose his interest in bees and beekeeping. Without a doubt he will do all he can in the interests of beekeeping at his new location.

Recovery of J. E. Pleasants

We are happy to state that Mr. Pleasants has recovered from the accident mentioned on page 297 of the September number. A short contribution from him will be found in this number.

Our Front Cover Picture

On our front cover for this number we give a partial view of the 240 colony home apiary of Mr. E. L. Hofman, of Janesville, Minn. He is, no doubt, the largest beekeeper in Minnesota. We hope to have an article from him soon with views of his other apiaries.

Although not of rugged health, Mr. Hofman does nearly all the work on his several hundred colonies himself.

A National Honey Day

Mr. Geo. W. Williams, former secretary of the National Beekeepers' Association and editor of the "Booster," is an enthusiast and believes in boosting the sale of honey. He suggests that Thanksgiving day be made the National Honey Day. In order to succeed in doing this successfully, it is necessary that all beekeepers unite in pushing this date for that purpose. What do our readers say?

We understand that this matter will be taken up by all the bee magazines of the United States, in order to make the day popular. There has never been any difficulty in making a certain day "Peach day" in cities where the dealers united in the matter. Thanksgiving is already "Turkey day," and there is no reason why we cannot make a success of it as "Honey day" if we start the ball rolling and keep at it.

Flowers and Bugs

We acknowledge receipt from our able correspondent, Mr. John H. Lovell, of Waldoboro, Maine, of a bulletin entitled "The Origin of Anthophily Among the Coleoptera." Our readers will remember the interesting article on this subject, entitled "Beetles and Beekeeping," page 167 of our May number, by the same writer. Mr. Lovell is an expert in entomology and botany, and his writings on the connection of these two sciences are of great value. It is interesting to learn that, although many coleoptera feed upon flowers, they are "of little significance as pollinators of flowers." They do not compare with the bees as pollen carriers and agents of plant fertilization.

Beekeeping in Wisconsin

This is the title of a thesis submitted for the degree of Master of Science at the University of Wisconsin by L. V. France, who has had extensive apiarian practice with his father, N. E. France, at Platteville. The advance sheets of this interesting work have been submitted to us. The author is now employed in apiary work, at the College of Agriculture of Minnesota, near St. Paul, in connection with Prof. F. Jager, instructor and experimenter in charge.

This thesis gives valuable information concerning the past and present status of beekeeping in Wisconsin. A number of tables are appended, showing the principal beekeeping regions own

L. V. FRANCE
Assistant in Apiculture at Minnesota

occupied, the flora with approximate dates of blooming of the different plants, the methods of wintering with dates concerning the confinement of colonies in cellar, data of winter losses and spring losses, apiary management, and a very exhaustive review of disease conditions.

Possibilities of cooperation among beekeepers are shown and emphasized, queen-rearing advice is given, and a number of letters produced showing the sentiment of beekeepers throughout Wisconsin as to the progress achieved, the usefulness of hive inspection, the possibility of help by the State University and the question of profitableness of beekeeping in Wisconsin.

From the maps contained in the work we see that some 18 or 19 counties on the north side of the State are still practically vacant as far as bees are concerned, so that there is plenty of room for more beekeepers.

From the statements made we glean confirmation of several facts already advanced by noted apiarists; that basswood is an irregular honey-producing tree, yielding nectar only about two years out of five; that aster honey often causes winter losses; that it is inadvisable, as a rule, to preserve queens over two years old; that stimulative feeding is profitable in locations where a positive lull exists between the blooming of early spring flowers, etc.

According to the reports given in this booklet, about 86 percent of the progressive beekeepers in Wisconsin winter their bees in the cellar. The loss of bees throughout the State from wintering and spring dwindling is given at 15 percent for the past five years. It is shown that the most of this loss, amounting to about $100,000 could be avoided by proper methods.

The United States census honey-crop report for Wisconsin in 1910 is quoted, the amount of honey being approximately 3,754,000 pounds; but this is exclusive of the products harvested by beekeepers located within the limits of cities, no attempt having been made by the Census Bureau to secure this.

From the above, the reader may judge of the interest to be produced by Mr. France's work. The University of Minnesota made a wise selection in employing him for apiary work.

Purity of Italian Bees in Italy

In the May number of the Bee Journal, page 162, in giving an account of our visit to San Remo, Italy, on the Riviera, I stated that the bees on the south side of the mountains, in Liguria, are not pure Italians. But I was unable to establish the line where the division between the Italian and the common bee is fixed. Mr. Piana, the young apiarist whose portrait is given in our August number under the uniform of a lieutenant, was kind enough to make enquiries of noted apiarists in Liguria, to secure for me the desired information, and sent to me a letter from a honey producer of the Ligurian Alps, Mr. V. Oreggia. This not being sufficiently explicit, I took the pains to write this gentleman for further enquiry.

The reader will perhaps wonder why I did not ascertain this interesting question while in Italy. The trouble is that when we travel we can take only a very narrow path. Besides, the line separating the two different races of bees must be over mountains well-nigh inaccessible to them. Such is the case between Switzerland proper and Italian Switzerland, for north of the Swiss Alps the bees are black, while south of them are found as pretty Italians as anywhere in Italy. The reply of Mr. Oreggia confirms my expectations. On the west end of the south slope of the Ligurian Alps, which continue the chain of the Apennines, the bees are of the common race. North of this chain, in Piedmont, about Limone, Cuneo, Mondovi, Alba and Turin, the bees are of the yellow race. But on the east end of Liguria, among mountains that end precipitously at the Mediterranean, the bees become yellower and yellower until the pure race is found at Genoa or east of there. I cannot do better than give a full translation of the letter received upon this subject from a man who is acquainted with both sides of the Ligurian Alps, and owns apiaries there from which he produces large crops of honey.

TAVOLE, PORTO MAURIZIO, ITALY, July 16, 1915.

Dear Mr Dadant:—Owing to the war, your letter of May 29 was received after a delay, with the two last numbers of your splendid Journal. I thank you. In a conversation which I had with Engineer Capponi, he had already mentioned your visit and the publication of your trip, which had pleased him greatly.

Concerning what you desire to know, I believe I can furnish you the most positive information, for I keep bees and have often occasion to do apiary work in the zone in question.

The chain of mountains which separates Piedmont from Liguria forms also the division between the two races of bees, but only up to a certain point, for, as I have had the pleasure of mentioning it to Mr. Piana, the yellow race is also found on the Ligurian slope, and from Genoa towards the center of Italy the race is always pure. Traveling from time to time through that country I will make it a point to ascertain the precise spot where there is a mixture of the two races and will advise you of it. I have apiaries situated on both slopes of the mountain chain, and particularly at Limone (on the Piedmont slope) and at Vievole (on the Ligurian slope). These towns are at an altitude of 1000 meters, 3300 feet, and at present one can go from one to the other by train, through a tunnel, in 20 minutes, a distance of 9 kilometers or thereabout. Well, in Limone, the race is pure Italian, and it is also true of all other localities in Piedmont. This may be ascertained in hundreds of different localities, and among them are the towns which you mention.

While enquiring of resident farmers with the intention of locating apiaries and inspecting the bees, I have observed hundreds of colonies and have never been able to find a single common bee in Piedmont. The people of that province know no other race. Being at Limone a few years ago, my opinion was asked concerning the question whether the bees on the south slope were cross. I replied in the affirmative, and explained that the reason of it was that the bees on the Ligurian slope were of the common race and the difference in behavior was due to the difference in race.

VITTORIO OREGGIA.

It may interest the reader to learn that Mr. Oreggia is the inventor of a circular honey section, which he has called "lune di miele" (honey moon), which has brought him a number of premiums and notices through his exhibits at different expositions. We will probably publish a picture of them.

A PART OF THE LIGURIAN ALPS THAT SEPARATE THE COMMON BEES FROM THE ITALIAN IN LIGURIA

MISCELLANEOUS NEWS ITEMS

Conditions With M. H. Mendelson.—In a recent letter from Mr. M. H. Mendleson, of California, we learned that he had the misfortune of getting a bee into one of his ears, causing much suffering and the loss of hearing in that ear, with partial deafness in the other. Another from him since states that he has partially, though not fully recovered.

In both his letters Mr. Mendleson gives reports on conditions which we believe our subscribers should have, and from which we quote as follows:

> This has been a great year, and a very regrettable disappointment to us. The combination of buyers has forced prices downward, making it almost impossible to make anything from the business. Honey is not keeping pace with the price of sugar, owing to the lack of organization among the honey producers, and it will be worse if bee men do not organize and get informed. Buyers make their brags that the bee men will have to come to their price. Organization would force them to give us living prices.
>
> I see no real hope for us now unless we get to business. The producers will be forced to organize and sell their own honey. It is so with the general producer. We have only had from a one-fifth to a one-fourth crop of honey. Good comb honey will be at a premium. In fact, taking one year with another comb honey does not pay. Too many poor years, and too many unfinished sections to carry over. The seasons are not as they used to be.
>
> Buyers have now bought up the white honey of southern California. Free tariff on honey has flooded our markets with the darker grades of honey from the Islands worse than we are aware of, and the dark grades cannot be sold here. Of course, the war does affect prices partly, but not sufficiently for the ruining prices offered.
>
> Beekeepers must organize if they wish to keep into the business. We cannot blame the buyer to buy cheap; *that is business*. The profit *is in the buying*. The buyer could also make a profit if we were organized, and have proper grading rules. It is a mistake to have white and water-white. It should be only white, as the water-white is but a small fraction of the amount gathered, and many times not any. M. H. MENDLESON.
>
> Piru, Calif.

Ontario Dark Honey Crop Report.—The Crop Report Committee of the Ontario Beekeepers' Association met on Thursday, Sept. 9, to consider the crop of dark honey. It was found that 105 members had reported 116,400 pounds from 5807 colonies; being an average of 20 pounds to the colony. This is about double of last year's average.

The local demand for white honey is exceedingly good, as many people are buying honey to put away instead of canned fruit, and the prices recommended by the committee are being realized.

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Western New York Field Meet.—The basket picnic and field meet of the Western New York Honey Producers' Association, which was held at the DeMuth apiary in Pembroke, N. Y., was as large a gathering of beekeepers as was ever witnessed in this end of the State. The forepart of the day was a matter of brushing up acquaintances and forming new ones. Next a little demonstration of finding queens and noting differences. Some favor the darker strains of Italians while some favor the lighter or golden strains. A few supers of honey were removed from the hives by Messrs. Vollmer & DeMuth, using their automatic bee brush for clearing the combs of bees. This honey was taken to the honey house where many expressed their way of uncapping; many preferred the hot knife, some the cold, some up stroke and some down stroke. It seems to be more a matter of personal practice.

Vice-President J. Roy Lincoln told of his experience in treating European foulbrood and curing same. Mr. G. C. Greiner, the veteran beekeeper whom if any one ever met would rarely soon forget, told of his campaign with the disease four years ago, of course coming out victorious in the fight. It was repeatedly brought out that a vigorous strain of Italians were necessary to clean up the disease.

Mr. J. T. Rasch told of his method of rearing queens and building up nuclei, which he has practiced for several years.

Dr. H. Smoyer exhibited some fine photographs of apiaries in Porto Rico, which by their appearances showed that there is some honey yield in that locality.

Mr. L. F. Wahl told how he packs honey for the trade in quarter pint milk bottles which keeps him busy in the winter months when he cannot rear queens, which he certainly does in the summer.

Several members were added to the association. Special credit should be given Mr. and Mrs. DeMuth for the lunch and refreshments that they cheerfully served to those who forgot to bring their lunch or found it inconvenient to do so. The association plans to make this summer meeting an annual affair, as it certainly is a day well spent.

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Northern Illinois and Southern Wisconsin Meeting.—The annual meeting of the Northern Illinois and Southern Wisconsin Beekeepers' Association will be held in the Court House in Freeport, Ill., on Tuesday, Oct. 19, 1915. All those interested in bees are invited to attend. B. KENNEDY, *Sec.*

Rockford, Ill.

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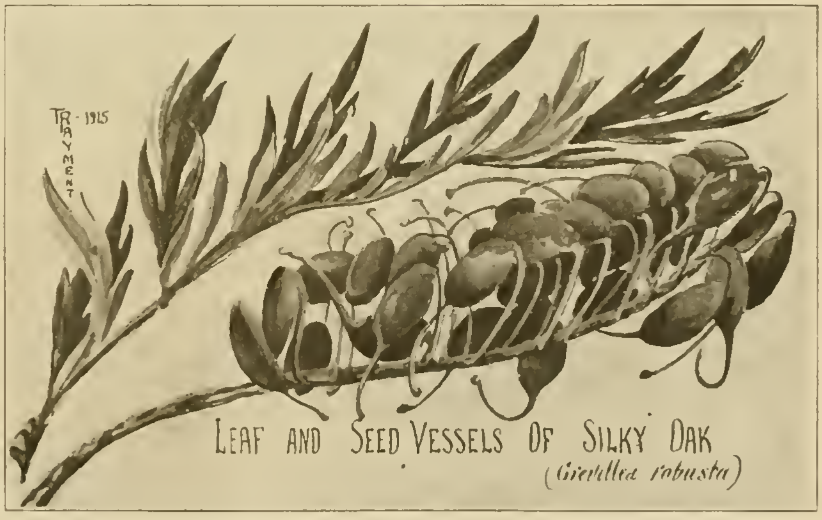
Idaho-Oregon Meeting.—The Idaho-Oregon Honey Producers' Association held their annual field day at the Gottfried Lohrli home place in Parma Idaho, on July 8:

Guy Graham, of Boise, State Horticulturist and Bee Inspector, spoke of the State appropriation of $3000 which was secured at the last meeting of the legislature. The department has been using it for the purpose of stamping out foulbrood from among the bees. Two thousand dollars was spent the first year and $1000 more will be spent this year. This will be of special benefit to the small bee raisers, as the larger



This photograph should have appeared in connection with Mr. T. Rayment's article in our September issue bee men are pretty well able to handle this disease and keep it out of their colonies. The smaller raisers have been the worst sufferers and will be most benefited.

Others who spoke briefly on various topics of interest were G. Fredericks, bee inspector of the Kuna district; Mr. McKibben, of Star, who has been appointed for some special inspection work; E. G. Johnson, of Payette, L. C. McCarthy, leading bee man in Nampa; Howard Malad, inspector from Oregon, who spoke of the differences between the bee laws of Oregon and Idaho, and G. G. Yoder, of Star, who is the oldest, most successful bee man in the country, having been for 40 years in the industry. In addition to these there was C. E. Dibble, of Washau, president of the Idaho-Oregon Association, who acted as chairman of the meeting. He extended a most hearty word of thanks to Mr. and Mrs. Lohrli for the offer of their home and grounds for the meeting, and for doing so much for the entertainment of their guests.

Officers elected for the following year were C. E. Dibble, president, and P. S. Farrell, secretary-treasurer.

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The Government official had been telling a simple old Scotch farmer what he must do in the case of a German invasion on the east coast of Scotland. "An' hae I reely tae dae this wi' a' ma beesties if the Germans come?" asked the old fellow at the finish. The officer informed him that such was the law. "All livestock of every description must be branded and driven inland." "Weel, I'm thinking I'll hae an aufu' job wi' ma bees!"—*San Francisco Argonaut.*

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To Iowa Beekeepers.—In planning for our program at the coming annual meeting Dec. 13, 14 and 15, we hope to make this the most successful of our meetings yet, and one to be long remembered by the beekeepers of Iowa. Most of the daytime programs should be ours for discussions and the giving of our experiences. Just a help-one-another experience meeting. To get the greatest benefit out of these meetings we should get help on our greatest troubles. We want a question box at this meeting that is full of the queries of members on problems they find in their every day work with their bees. It is not going to be the ordinary type of question box to be stuffed at the door with questions to be answered at the last few minutes of the meeting, but send your questions now while the propolis is still sticking to your fingers and your troubles are fresh on your mind. These should be sent at once to the president, C. E. Bartholomew, of Ames, Iowa, and they will then be assigned to the persons best fitted to answer them at the meeting. Don't be afraid to send in any and all questions you may wish information upon.

The *get together spirit* is what the beekeepers of Iowa most need at this time. The association needs more members and more work for the beekeeping industry of Iowa. If the whole fraternity of beekeepers had worked as hard as a few members did last winter the beekeeping legislation would not have died an untimely death last winter. There will be another legislature in the near future, and now is the time to start our fight for the beekeepers' rights by strengthening our organization and increasing the membership. Every member of the association should make it his business to send in the name and the fee of 50 cents of every beekeeper in his neighborhood who is not enrolled in the association. Send in one new member, that will double our strength at least.

Begin to plan now to attend the meeting, in Des Moines this winter, in person as well as in spirit, and do not allow anything short of sickness to prevent your being there. This is your meeting remember, and the success of

JOLLY CROWD AT THE IDAHO OREGON FIELD MEET HELD AT THE LOHRLI APIARY, PARMA, IDAHO it depends on your personal attendance.

At the evening meetings there will be lectures on live subjects by some of the best beekeepers in the country, and you cannot afford to miss them.

Committee on Program.

J. Vandervort.—Mr. Vandervort may not be known by reputation to all our readers. He is the artist and mechanic who first manufactured comb foundation mills of varied fineness to make the different grades of foundation. His were the first machines to sesecure a base thin enough and a side wall light enough to avoid the "fishbone" obstacle in foundation for sections. He is a most disinterested man who worked for the love of success rather than for profit. Having heard of his being laid up with rheumatism we wrote him to renew old time acquaintance and asked him for his photograph.

In reply we received the following letter:

Laceyville, Pa., Aug. 20, 1915.
Mr. C. P. Dadant, Hamilton, Ill.

My Dear Friend:—Your very welcome letter was received. I am sending a photograph taken by one of the children in the yard. I do not think it will be any thing you can use.

I have been confined to my home for the past four years. I am unable to walk at all without the use of two crutches. I am in my 84th year now, so I cannot expect to appear very young.

It would give me great pleasure to meet you and yours once more.

Yours truly, J. Vandervort.
Laceyville, Pa.

Dr. Miller comments as follows:

"Very interesting it is to look again upon the face of my old friend, J. Vandervort. Long ago he ran a machine shop in Marengo. That was very early in my beekeeping career; indeed, before I had learned the size of a Langstroth frame. I had, to be sure, begun to use movable frames, but they were a sort of nondescript in size, deeper, and I think shorter, than the Langstroth. Then when he left Marengo I bought what hives he had on hand, some 20 if I remember correctly. Instead of the frames being 17⅝x9⅛, the regular Langstroth size, they were ⅜ of an inch longer and ⅛ shallower. I don't know why that was, unless because 18x9 appealed to Mr. Vandervort's mechanical eye as being more regular. Being made by so fine a mechanic, of course those hives were a fine specimen of workmanship. Neither of us at that time had any thought that he would come into such prominence as a maker of foundation machines. Here are my most cordial greetings, old comrade."

c. c. m.

J. VANDERVORT

Obituary—C. F. Greening.—We have recently been apprised of the death of one of the pioneers of beekeeping, C. F. Greening, of Grand Meadow, Minn. He was born in Worcester, England, in 1845, and came to America with his parents two years later, settling in Wisconsin. He fought in the Civil War, going to Minnesota soon afterwards. He made his home in Grand Meadow until his death, which occurred on July 1, 1915. He was founder and president of the Exchange State Bank of that city. He had always taken an active interest in beekeeping, and was the originator of the successful nonswarming method given by him in our columns, page 310 of September, 1914.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Beekeeping for Beginners—What is the Profit?

Inquiry comes as to the possibilities of beekeeping for a young couple with a great longing for country life. As usual, the question of profit is involved, as also the amount of capital needed in the business, the number of bees that can be kept on an acre, etc. Such inquiries are constantly arising, and it is a pleasure to reply thereto.

As to the profit, exact figures can be given of a net return of $40 from a single colony of bees. Names can also be given of women who have cared for 100 colonies or more, without calling in the aid of the masculine partner. A very little calculation will show that a a profit of $40 per colony the net income from 100 colonies is the neat little sum of $4000. As the capital invested for 100 colonies need not be more than $1000, this is rather an attractive proposition for the honey obtained. But there is money also to be made from the sale of bees. Affidavits can be produced to show that a single colony has been increased to ten in a season. Let us be conservative, and call it three. That would make the number at the close of the second season 9; 3d season, 27; 4th season, 81; 5th season, 243; 6th season, 729; 7th season, 2187; 8th season, 6561; 9th season, 19,683; 10th season, 59,049.

At this point it might be well to sell out and retire from business, for at $5.00 per colony the outfit would bring $295,245.

All this looks very pretty on paper, but it never existed except on paper. The number of those who have succeeded in owning as many as a thousand colonies is very small indeed. Although $40 and more has been achieved as the net returns from a single colony, such a result is very exceptional indeed, and probably no one ever succeeded so well with more than one or two colonies in an apiary of any considerable size, and perhaps only once in a lifetime.

Dr. E. F. Phillips, in his book, "Beekeeping," estimates the average annual crop of comb honey at 25 to 30 sections (each section weighing something like 14 ounces), and for extracted honey perhaps 40 to 60 pounds. How much money that would bring depends upon circumstances. In some places where prices are high and the retailing is done by the beekeeper directly to the consumer, the amount might be $10 or more per colony. On the other hand there are beekeepers who must sell at wholesale, and at such prices that the designated amount of honey would not amount to more than $3.00 to $4.00.

The question as to how many colonies of bees can be kept on an acre of ground is not to be answered in the same way as would that question regarding other kinds of stock. If a given number of sheep can be kept on an acre of ground, then twice that number can be kept on two acres, whereas just as many bees can be kept on one as on two acres. For that matter, a man or a woman with a good sized garden plot can keep just as many bees as the one with 500 acres. For bees are fleet of wing, scouring the field in all directions to a distance of a mile and a half or more, and it seems to make little difference to them whether a certain honey plant be a mile away or right at the door.

Considering the great area of flight reached by the bees of an apiary, it will be seen that the question as to what honey plants should be planted on an acre or two would be only a drop in the bucket. Indeed, there is no plant that can be profitably planted for the honey alone. Instead of thinking to plant for the bees, the thing is to find a place where already there are honey plants within a mile or so. Such places are almost everywhere. White clover, alsike, buckwheat, fruit trees and basswood are a few of the many plants from which nectar is obtained. Sometimes, however, something can be done to encourage the planting of plants that are profitable in other ways, and at the same time yield honey. Some beekeepers furnish alsike seed gratuitously, or at bargain rates, to be sown within a given distance. Sweet clover may be sown in waste places.

Not every place, however, where honey plants abound, is open to occupation. For in most such places the ground is already occupied. Although no one has a legal right to any given territory of bee pasturage, it is generally considered among beekeepers that one already on the field has a moral priority right, and if the field is fully occupied already, one who should establish another apiary on the same ground would be guilty of moral wrong, as well as doing a foolish thing on his own account. There are, however, many places where the precious nectar is going to waste.

There are probably not many places where more than a hundred colonies can be profitably kept in one apiary, and at any rate the beginner should hardly think of having more than two or three colonies at the start, increasing the number with increase of knowledge. With as many as a hundred colonies one would hardly have time for other business; but many a one keeps half a dozen colonies in connection with other business, hardly feeling the time taken by the bees, while having a bountiful supply of nature's choicest sweet, and some pin money beside.

For one who thinks of starting in beekeeping, the first thing is to secure a good text book on the subject, such as Dadant's Langstroth, Root's A B C and X Y Z on Beekeeping, or Phillips' Beekeeping. Afterward a periodical will be helpful, and we have the American Bee Journal, Gleanings in Bee Culture, and Beekeepers' Review. Farmers' Bulletins No. 447 and No. 503 can be had free from the United States Department of Agriculture, Washington, D. C. Some of the States issue bulletins on bee-culture. Bee conventions offer opportunities not to be neglected.

The born lover of bees will find the business fascinating and profitable. Others will be likely to continue it not for long.

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Chocolate Honey Drops

Melt one cake of sweet chocolate. Take one pound of comb honey (one box), and just before the chocolate is ready to dip, cut the honey with a sharp, hot knife into pieces about one-half inch square. Pour the chocolate into a deep dish, and dip the squares of honey as quickly as possible, being careful to cover them completely with the chocolate. Set them aside on brown paper to cool.

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How to Find a Queen

"My neighbor and I rear 3-banded Italian bees. He started two years ago with a 2-frame nucleus and an untested queen from Arkansas. He now has nine colonies and I have two from the same start. While we have both lost some swarms by not watching them closely, I think that is pretty good increase. These are my first bees.

"Last year my bees gathered but little honey, so I fed them 2 to 1 syrup. I put a double thickness of muslin (a flour sack) over the hive-body with a hole about 4 inches in diameter cut out of the center, then I turned a tin can of syrup upside down over the hole. I tied two thicknesses of muslin over the can first and put a super on. I threw an old quilt over them and they were fine this spring.

"Will you tell me how to find the queen? I lost a fine large swarm not long ago. It came out and went back to the hive. The next day I watched nearly all the time until dinner, when I left long enough to eat. When I went back they were gone. I was so disgusted I thought I would experiment a little and stop a second swarm coming out, as I read they would do this. This hive had been boiling over with bees for some time; the super was completely filled with them. Do you think I should have given more room or divided them before they swarmed? They were in an 8-frame hive under a tree facing south. The same day after they swarmed I divided them.

"I took out all the frames and looked them over. I could see no queen but lots of drones. Of course, I hardly expected to find a queen then. I found several queen-cells sealed. I took out three frames of brood with two queen-cells and put them and their bees into a new 8-frame hive, then I shook a lot of bees off the other frames into this hive, and filled both hives with empty frames, as I had no starters. I set the new hive about 2 feet from the old one. All the field bees except a few went to the old hive where I left five frames of brood and comb and two queen-cells. There were very few field bees working at the new hive, and I wondered if the brood would starve, though there was honey in the comb, too.

"I looked at it about the tenth day and found things were fine. The old hive had two empty queen-cells, and a great many eggs just laid, apparently, but I looked faithfully for a queen and couldn't find any. There were lots of drones. I have never seen a queen, but I think I would know one by pictures and descriptions, for I read a great deal about them. I suppose she is as likely to be on one comb as another. I am afraid I might have let her fall off the frames, for I took them all out and set most of them against the hive while I was looking for her. Do you think she would go back to her own hive again if I changed them?

"I am very much interested in bees, and I am going to try some of J. J. Wilder's Caucasians, I think. I have a small fruit farm, so have neighbors around me."

[Mrs.] Jennie E. Merritt.

Kewanee, Ill.

Your rate of increase was unusually rapid. Too bad you lost those swarms.

Finding a queen is chiefly a matter of patient looking. With practice you will become proficient, but some little things will help from the start. If possible, when looking for a queen, sit with your back to the light. Use as little smoke as possible. If you smoke heavily, so as to get the bees running, you may as well bid good by to the queen until another time. Handle the frames gently, without any jarring. If there is no brood in the first frame or two, it is hardly worth while to look there for the queen; she will almost certainly be on one of the frames having brood. The queen is quite inclined to get away from the light, so when you lift out a comb you are to look first at the side farthest from you, but before this you had better glance at the side of the next frame in the hive. After first looking over the farther side of the comb in your hand, examine the other side, and thus proceed until you have examined all the combs.

Although it was not worth while to look at the first comb if no brood was in it, it is worth while to look at the last frame, even with no brood in it, for in fleeing from the light the queen will go upon a comb without any brood. If you don't find her with once looking over, try it the second time. If you don't find her then it is hardly worth while to continue the search. To be sure, you may find her the third time, but in some way she is likely to be hidden, hard to tell how, and you may look an hour longer without finding her. But if you close the hive until the next day, or at least until an hour later, you may then find her without trouble. You will learn more about finding queens by actual practice than by all the instruction in the world.

As to that swarm going off, of course you would have saved it if you had divided the colony before it swarmed; but the thing you are not easily forgiven is that you did not clip the queen, taking off both wings on one side. Then the swarm could not have gone off, and the worst that could have happened would have been the loss of the queen, yet there is not one chance in five that that would have happened.

Replying to your question about losing the queen when handling those frames, it is not likely you lost her in that way, although if you have a long experience you will find that sometimes a queen will drop off a frame on the ground or turn up in the most unexpected place, even on top of your hat—that last thing has happened several times "in this locality." But if she falls off on the ground she is practically certain to find her way back to the hive, unless there is some other hive nearer, and if she enters that she is a goner. If you set the first frame on the ground, leaning it against the hive, there is little danger of any mishap; but if you take out more frames it is better to set them in an empty hive.

It is not entirely clear what was your proceeding, but after you made that division, and a queen was laying in one or each hive, if you took combs with adhering bees, or bees without combs, from one hive to give to the other, without seeing the queen, you did a reckless thing. Please don't ever do anything of that kind again without *knowing* where the queen is. For if you changed a queen from one hive to the other, you may be sure that queen will never get out of that hive alive. Still, you are quite right in making use of the movable feature of your hives. What's the use of movable frames if you don't move them?

You say you wish you had divided your bees before they swarmed, and given just one queen-cell to each. That would do if you removed the old queen, but if you left the old queen with one of the queen-cells, and that on the old stand, there would be quite a chance of the old queen leaving with a swarm.

Even if Caucasians are better for Mr. Wilder, are you sure they will be better as far north as you are?

BEE-KEEPING IN DIXIE

Conducted by J. J WILDER, Cordele, Ga.

The Season's Results

As previously stated, Dixie has had an off season this year. In some sections no surplus at all; in most sections just a little; in some spots an average crop. In the great cotton belt the flow from this source has been one-third of a crop, owing to the smallness of the plants caused by adverse weather conditions. In the partridge pea belt the yield from this source is as good as common, if not a little better.

Owing to the abundance of rain the prospects for a late fall flow from goldenrod and asters are good, and the outlook is that the bees will go into winter strong and heavy in stores.

Caucasian Bees Not All Alike

Dr. Miller, on page 317, September number, "Caucasians or Italians," says "most beekeepers prefer the Italians, but Italians are not all alike and neither are Caucasians." There can be no doubt that this statement is true, for some strains are better than others in both races. However, there is nothing definite in this statement, and the fellow "on the fence" over the stock question does not know which to buy. Buyers generally select their strain and stock from the statement of the queen-breeders. Each queen-breeder should be willing to stand back of his statement and guarantee the good points of the stock he sells as mentioned by him. I know of one case at least where this was done and the breeder made good the failure of his queens in the merits represented. Many buyers make the great mistake of buying stock from many queen breeders when it would be far better to purchase all queens from breeders whose stock has the desired merits or qualities.

Now about good and poor Caucasians. I had some experience at different times with the latter when my stock was imported, but there was an easily distinguished difference in their colors or markings, varying from a dark smutty greyish color to a very bright grey and some almost yellow. It was the more smutty color with the brighter steel colored bands that had the highest qualities, and I let the other varieties go and stuck to these with remarkable results. So all Caucasians are not alike in color or qualities, as Dr. Miller states.

Since my stay up in the mountains on the line of Georgia and North Carolina this summer, I have been out over much of North Carolina and South Carolina, both by rail and on foot, making a study there of beekeeping as well as of the honey plants, etc., and on my rounds I have seen some Caucasians that were under test and were not satisfactory at all. They would not work in supers or store any surplus honey, and never got very strong, and were far from having the general characteristics of their race, so even this, the strongest race of bees known to us, has species that are almost worthless. No, they are not all alike in qualities.

[The great objection to Caucasians, in our experience, is the difficulty of recognizing a small amount of hybridization with the common bee. In the Italian race, the crosses show much more readily. Yellow Caucasians are not liked in Europe.—EDITOR.]

Tupelo Gum a Rare Honey Plant

The market is always open, and there is a ready demand for the thick, delicious non-granulating tupelo gum wherever it is known. It is of very bright lemon color, is as attractive as its flavor, and perhaps there is no honey equal to it in quality. But there isn't a great amount of it saved in its purity, owing to the scarcity of the plant and its timid way of yielding, although when conditions are right it is our heaviest yielder during its short blooming period.

But there could be much more of it produced if beekeepers would consider its value and locate at least a part of their bees in places where it is found. It grows along the water's edge and through swamps or low lands of many small streams in southern Georgia and northern Florida, as well as along a number of the larger streams, but you find it mostly scattered under large timber (see cuts) growing very dense in some places.

TUPELO GUM IN BLOOM

How to Prepare Bees for Wintering

"MR. WILDER:—How can I prepare my bees for good and successful wintering? I am running for chunk honey, and I want to take off my fall crop. May I expect to find enough honey in the brood-chamber for winter stores. I use 8-frame hives, and have some supers with empty combs. What should I do with them? I also have two weak colonies; can I build them up at this season of the year? How much stores should I leave in each hive?" L. N. HODGES.

Oliver, Ga.

It is never advisable to suppose that there is plenty of stores in the single brood-chamber to winter the bees on, for there is a large number of colonies in every apiary that are almost storeless, especially where they have been supered well. The only safe thing to do is to examine them carefully at this time, looking over each comb. The amount of stores each colony should have for successful wintering depends largely upon how soon the spring flow will come next spring. If it is late it will take considerable more.

My bees in the huckleberry and titi region consume only a very small amount of stores because the flow is on as soon as there is some let up in the weather in very early spring, while in the gallberry and poplar region, when the flow comes on in the latter part of April, my bees consume more stores.

To be on the safe side in the first case one average frame of honey together with whatever may be around the brood will be sufficient, and in the latter case two frames of stores will be enough. These frames of stores are best placed on either side of the hive up against the wall, and never in the middle of the brood-nest. If the frames of honey are not obtainable we have to resort to the honey stored in the supers, and in this case we leave the supers on over winter, but not more than one to each colony. The off grades or unfinished sections to the amount of 10 or 15 pounds of honey can be left to them and they will carry it down as they need it during warm spells. Sometimes they carry it down and store it in the empty comb below, if it is uncapped. If they do this by early winter, the supers can be removed and stored away for baits next spring.

It is always better to remove all supers at the approach of cold weather, as they are of no service at all if left on, and besides they add a lot of extra space for the bees to keep warm during cold weather, which indeed is a great tax on them at this critical time. The necessary heat of the cluster is maintained at the expense of the stores they have, and successful wintering depends upon the amount of stores. We should be thoughtful of our bees in this struggle to maintain their existence, and do all we can to help them over it. Close clustering quarters and plenty of stores are the main requirements.

As for building weak colonies up to stronger ones at this late time, it is difficult, but it is better to do it even now than not at all. Only frames of well sealed brood should be added, one to each nucleus every six or eight days from the strongest colonies. You may find but little brood in colonies headed by old queens, and here again is where young queens are needed. If the weak colonies only contain a double handful of bees each, it would be best to unite two together before starting to build them up. This can best be done by the Miller plan, setting one on top of the other with a sheet of newspaper between which the bees will gnaw away and quietly unite. Then the bees can all be placed in one body and the other set of combs placed on a strong colony until settled cold weather when they can be removed and set away for next season's use, or they can perhaps be best used by replacing undesirable combs that are in the apiaries.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Rosinweed Honey

Bees will not begin working on rosinweed until sweet clover and alfalfa have largely stopped yielding nectar. Rosinweed is very plentiful this year, and some of our late honey will be yellowed considerable by it.

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Photo Plates for Shipping Cases

Mr. W. P. Collins, of Boulder, purchased several thousand used photographic plates, 5x7 inches in size. By using this glass for shipping cases a saving of more than one cent per case was made. The glass is cut in two and then cut to length so that two pieces make one length of about 12 inches in a double tier case. This photographic glass is clean, and none of the lights are too thick for the groove, as is often the case with so much glass cut to order. The photo glass is cleaned with lye, and a large quantity can be cleaned by filling the cleaning vat, using coarse sand between each layer of glass so that the lye water can reach the entire surface of all the glass.

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Value of Sweet Clover

I notice that Mr. R. A. Morgan, of South Dakota, is quoted in "The Southwest Trail," official publication of the Rock Island railroad, as saying that sweet clover is worth $25 an acre for honey, and that he would pay that much rental for sweet clover acreage within a short distance of his apiary. If Mr. Morgan is correctly quoted, I fear he is valuing sweet clover rather high. Some seasons, sweet clover might be worth $25 an acre, but I think Mr. Coverdale's estimate of $4.00 an acre is nearer correct.

If Mr. Morgan would contract for two or three hundred acres of sweet clover for a term of several years some one could make a small fortune renting him bee pasturage. I saw hundreds of acres of sweet clover, this year in Colorado, that was not worth 50 cents an acre for bees on account of poor weather conditions.

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The Boulder County Fair

The Boulder County Fair held at Longmont Sept. 7 to 11, was a success in may ways. It was the opening season, and the grounds and buildings are all new. The main exhibit building is the finest one in the State outside of the State Fair, and I do not doubt it has no equal there. The bee and honey exhibit was creditable, although there was only about $25 in premiums offered. Prof. D. W. Spangler had charge, and Mr. J. C. Aikin, of Loveland, was judge.

The premiums were awarded as follows: General display of honey, bees and apiarian products, S. Francis; best six cases of comb honey, Milton Can-

TUPELO GUM AS SEEN ALONG DIXIE STREAMS

tonwine, first; A. J. McCarty, second; best case fancy comb honey, Milton Cantonwine, first; D. W. Spangler, second; best case No. 1 comb honey, A. J. McCarty, first.

Boulder beekeepers were not represented in the exhibits, but another year they should be.

CALIFORNIA BEE-KEEPING

Conducted by J. E. Pleasants, Orange, Calif.

Honey Crop in Southern California

The crop in southern California averaged from 50 to 60 pounds per colony only, as nearly as can be ascertained, for this season. This light yield was due to rather extreme weather conditions in the spring, in some localities to the ravages of the sage moth larvæ, but most largely to the presence of European foulbrood. This has been almost an epidemic in our immediate section this year. Out of about 8000 colonies in our county we found 1000 diseased with this malady, while we found only 25 cases of American foulbrood. We have worked hard on the latter for a number of years, and have it practically stamped out. But now we are confronted with the European, and the discouragement that always accompanies its advent. It is a hard thing to deal with, owing to the little that is understood as to the method of carrying the infection, but our skilled beekeepers are taking hold of the problem with a will and we expect to win out. Increase has been small this year; in fact, I doubt if increase has been sufficient to make good the losses caused by disease.

Our honey was of a most excellent quality in the sage region. The first two runs were water-white of heavy body. We were interested in Mr. Foster's remarks in September Bee Journal, on the use of honey in cooking. There is quite a field to be opened up in that direction. We hope the Colorado Station will issue a bulletin on that subject for distribution.

The *Grevillea robusta*, or "silky oak" referred to by Mr. Rayment in September issue of the American Bee Journal is grown to quite an extent in southern California as an ornament, but not so much as formerly, as it is found to be quite easily broken by the winds in winter, and many beautiful trees are thus given a ragged appearance. It has been largely replaced as a street tree by the black wood acacia. The drawing by Mr. Rayment of the spray of blossoms with the "honey-eater" is certainly very beautiful.

The bees here now are working heavily on the species of eucalyptus in bloom at this season. The "sugar gum" and ironbarks are musical these mornings with the hum of bees on their sprays of bloom. The autumn blooming eucalypts should be more largely planted on the waste lands on our bee ranches.

CANADIAN BEEDOM~

Conducted by J. L. Byer, Mt. Joy, Ontario.

Bad Weather

On Sept. 13, we still have heavy downpours of rain so frequently that hundreds of acres of heavy crops of grain will be a total loss. But for the last two weeks, whenever we have not had rain, the weather has been warm—some days quite sultry. There is nothing doing here, so far as the bees are concerned, as buckwheat is past. But at the north yard the asters and goldenrods are yielding freely, and once more we will have the bees wintering on stores that generally give a bad account of themselves, though our bees at this yard wintered perfectly on this honey last year.

There is nothing to do but risk it again, as brood-nests as well as supers are filling, and by the time the flow is over the weather is too cool to tear brood-nests to pieces to extract the honey. As was done last fall, we will feed the colonies in Langstroth hives all the sugar syrup they will take after the supers are off, and the large hives will have to take chances, leaving them as they are.

Ontario Convention

Present intentions are to hold the Ontario convention during the last week in November. This is later than usual, and a large number of beekeepers, who are also deer hunters, will have a chance to attend the convention and yet not miss their annual hunt. We are hoping for a large attendance from all parts of Ontario as well as other Provinces and are expecting a number of friends from over the line. Last fall the latter were conspicuous by their absence, and we sincerely hope to see old-time friends and many others present.

One attraction already secured, I believe, is Dr. Phillips, of Washington, D. C., who has promised to be present and give a number of illustrated addresses. The date being later than usual, those who winter their bees in the cellar will have their work done so that they will be able to come, too. The trip at that time of the year when work is not pressing will be a source of pleasure even if nothing be gained from a financial standpoint.

Fair Crop

While the season has been a peculiar one in Ontario in many respects, yet after all the ups and downs, the majority of sections have given a fair yield of honey. In our own case, while the crop is light in York county apiaries, the northern apiary has been fairly generous in returns, so we are not at all pessimistic.

By the way, I have never before tasted anything better than some honey produced at that apiary this year, a blend of willow herb and basswood. It is simply exquisite. I am sorry to say we have none to sell as the supply was limited, and our own year's reserve for our family's use is about 300 pounds.

Good Prospects for Clover

Owing to the great amount of rain, clover is coming on abundantly and, good winter assured, 1916 should be a genuine clover year. Some have expressed doubts as to the clover wintering well if we should have a severe season, as the plants are rank and tender. But in the fall of 1912 we had somewhat similar conditions with rank growths of clover, and the plants never came through better. This comment is of course in relation to alsike clover, as white clover generally winters no matter how the plants are, provided they are alive in the fall—late summer drouths being the chief danger.

The Value of Proximity of Water in Spring

Often I am asked by beginners the proper way to face hives in an apiary. Many of our best apiarists use the quadruple case for wintering, and they have the bees, during winter and summer, facing all points of the compass.

It appears to make little difference in results, no matter which way they face, but personally I much prefer the south entrance. It is the coolest during a time when coolness is desired, while during early spring when warmth is required, it is the warmest. All our bees except those at the Cashel apiary face south, and the picture shown will explain why we did not face the hives south in this yard. The picture was taken some distance from the bees, so that the slope would show plainly. The ground slopes to the west, and of course it was much easier to place the hive stands facing that way, as I like the hives to lean well forward for outdoor wintering. They have been placed that way for two seasons, but even if it will take a lot of work to change them around, we seriously think of doing so. Why? Because on a hot summer afternoon the heat is intolerable to the bees, and they are driven away from the entrances often to the back and underneath the hives.

The apiary is in too hot a spot to start with, as the swamp shown shelters the bees on the southwest, west, north, and northeast, leaving only an opening to the direct south. As a result, little wind reaches the spot, and while it is ideal for bees in many ways, it is too hot during summer. I think if we face the hives south it will improve matters, as the sun will not be "blazing in" at the entrances all afternoon.

The other picture shows another apiary of ours, picture taken last spring, just when bees were being unpacked. Some of the packing cases will be noticed piled two deep at the end of the yard. This yard is sheltered on all sides with timber and high land. It, like the other yard, is an ideal location, but is also very hot at times. Shelter like this is, in my opinion, much better than a board fence. At both the apiaries shown here there is damp ground at the bottom of the yard, and bees can get all the water they need in early spring without leaving the shelter of the timber. This is a valuable factor. Many apiaries are kept back in cool spring weather because great numbers of bees are lost while out after water. Often, at that time of the year, the sun will come out brightly and the bees will be tempted to take the long trip for water; in a moment the sun goes under a cloud and stays there long enough to chill them so that they never get back to the hives.

I have learned the value of near-by water by having bees where it was not handy—results showing the difference are always in evidence.

CASHEL APIARY OF J. L. BYER

ANOTHER BYER APIARY PROTECTED FROM THE WIND BY WOODS ON ALL SIDES

[Our experience coincides with that of Mr. Byer. At two different times in past years we had occasion to handle yards in which the hives faced due north. The results in the winter were disastrous. Mild winter days were of no avail to them, and the long confinement and cold exposure killed them. Perhaps these were colder winters than common. But we have no desire to repeat the experiment. It is quite probable that quadruple cases give a different result.—Editor.]

CONTRIBUTED ARTICLES~

Extracting Combs vs. Sections

BY DR. C. C. MILLER.

It is said that a great deal more honey can be obtained in extracting combs than in sections. Taken as a general statement, this is true, emphatically true. But there is danger that it may be carried too far, especially by beginners. In too many cases the beginner has an idea that in some way not clearly understood there is a magical attraction for bees in an extracting comb even if there be no comb in the case, but merely a frame filled with foundation intended as an extracting comb; and that on the other hand the bees have a certain aversion to a section, no matter what may be in the section.

Nor is this idea entirely confined to beginners. Not many years ago a plan had a certain vogue, which was as follows: "When the harvest begins, give the colony a super of extracting combs, and when the bees have filled these to a certain extent put a super of sections under the extracting combs. The bees will at once begin work on the sections, and the result will be that you will get just as many sections as if you had not given the extracting super, and the extracted honey will be so much extra." The idea of getting something for nothing is generally an appealing thing, and when this plan was endorsed by experienced beekeepers it is no wonder that that super of extracted honey free gratis for nothing appealed strongly to beginners. But latterly we hear nothing of the plan.

Let us see if we cannot get right down to the bottom of the case. A frame intended for an extracting super has no more attraction for bees than a section *unless* there is something attractive contained in the frame. That something is comb—drawn comb—and drawn comb is just as attractive in a section as in a full-sized frame. A frame in an extracting super may be filled with foundation, with drawn comb, or with starters of either. The same may be said of a section. When an extracting super is given it generally contains drawn combs, and when a section super is given it generally contains foundation; so it is true in general that bees begin work much more readily in an extracting super than in a section super.

If both the extracting super and the section super are filled with foundation, or if both are filled with drawn combs, then there will be no perceptible difference as to the promptness of the bees in beginning work, although it is quite possible there may be a slight difference in favor of the extracting super, since the bees may not like so well the separators and the smaller compass of the sections.

But let an extracting super be filled with foundation and the section super with drawn comb, and the bees *will prefer the section super every time.*

Neither is it necessary that the super, no matter which kind, be *filled* with drawn comb to attract the bees. If a single comb be present, no matter whether in a frame or in a section, you may rely upon the bees to begin work in it just as soon as there is lack of storage room in the chamber below. More than once it has been shown in a poor season, when a single bait section (a section containing drawn comb) was given in each section super, that throughout the whole apiary the baits were filled and nothing more done in the supers. It is very doubtful if work would have *begun* any sooner if the whole super had been filled with combs.

From all this it is easy to see that when an extracting super was first given, and afterward a section put under it, the bees would begin work more promptly than if a section super without any bait had been first given, and also that more honey would be obtained in a super filled with combs than in one filled with foundation, resulting satisfactorily *if* that amount of extracted honey were desired. But if the desire were to have all the sections possible, then it can be seen that the bees would have begun work just as promptly in the sections without the extracting combs preceding, provided a bait were used, and that it is all moonshine to think that a super of extracted honey was obtained without lessening the crop of section honey.

Some have thought that if a frame of foundation be put at each side of a super, the remainder of the super being filled with sections, and all supplied with foundation, the bees would commence work first upon the frames at the sides. If such persons put the matter to actual trial, I think they will find that the bees will begin first on the sections, not because they prefer sections to frames, but because the sections are in the center.

[This is one of the rare instances where the two editors do not fully agree, or at least where I find it necessary to emphasize a part of Dr. Miller's statement, while not fully agreeing with the rest.

There is "a difference in favor of the extracting super, since the bees may not like so well the separator and the smaller compass of the sections." This is where emphasis, to my mind, is necessary. From actual tests made a number of times, I have ascertained that the bees *do not* like so well the separators and the smaller compass of the sections. For an explanation of the reason why the bees do not like so well the small compass of the sections, it is necessary to refer to the explanation given in paragraph 741 of the "Hive and Honey Bee," where Oliver Foster, now deceased, is quoted. He said:

"When we take into consideration that the object on the part of the bees, in storing up honey in summer, is to have it accessible for winter consumption, and that in winter the bees collect in a round ball, as nearly as possible, in a semi-torpid condition with but little if any motion, except that gradual moving of bees from the center to the surface and from the surface to the center of the ball, we may imagine how unwelcome it is to them to be obliged to divide their stores between separate apartments, each of which is four inches square......"

The use of the separator still increases the bees' dislike of this storage room.

At several different times I have tried giving to a strong colony sections with separators in the center of the super, with extracting frames on the sides, all supplied with strips of foundation, and in every instance the bees began at both sides, in the extracting frames—although the sections were nearer to the brood—and filled the extracting frames almost entirely before beginning in the sections. Emphatically, the bees *do not like so well the small compass of the sections.* I can imagine but one condition in which the bees might begin in the sections first. This would be if the extracting frames were so remote as to be out of the part kept warm by the cluster.

As this matter is of interest, and as conditions might cause a difference in results, we would like to have experienced apiarists make tests of this matter and report.—C. P. D.]

This criticism having been presented to Dr. Miller, he replied in his inimitable style, as follows:

Again I'm the victim of misplaced confidence. Trusting to an acquaintance of some years with bees and their habits, I decided what they ought to do, and with the confiding innocence of youth and inexperience trusted they would do what they ought to do, and gave my verdict accordingly. Now comes the higher court and makes a reversal of my decision. As between the two decisions, I decided what the bees ought to do, or at least what I thought they ought to do, and you decide by what they actually have done. I've tried—tried hard—to think up some sort of way to explain that your experience is exceptional. Can't think up anything that will pass muster. So I must ruefully admit—once more—that I don't know as much as I thought I did about bees. But I'm learning, and so not utterly discouraged. If you will formulate into words in a proper manner an expression of deep humiliation at the exposure of my ignorance, I'll return it signed.

And now will some one be good enough to tell me whether in all cases bees will begin first on an outer extracting frame, said frame being filled with foundation only? If they will, it certainly appears to be a good thing. That frame will be all right for extracting or for bulk honey, and we will be rid of the outside row of unfinished sections that we generally are more or less troubled with.

Other things being equal, I think we would all expect the bees to begin on the central part of a section super. In the cases cited, the only thing, apparently, to make the bees depart from this rule is the absence of the three partitions made by the end-bars of the sections. Has the strength of the colony anything to do with the case? Dadant colonies have a habit of being strong. In the case of a very strong colony, in a very heavy honey flow, bees work pretty much alike all over a super of sections. In such a case it is not very hard to imagine that a very little preference for the less confined outer part might make the bees start there a little sooner. The question is whether the same would hold with a weaker colony, or in a poorer yield. It will be interesting to have testimony from any one who may have experience on this point.

The thing now learned is that bees dislike having their storing room cut up into small compartments so much that they will begin on the outside rather than the inside if the outside be less divided, and I suppose this holds true whether the super be filled with foundation or drawn comb, so long as both frames and sections are filled with the same thing. This, however, is a matter independent of the fact that bees have a strong preference for drawn comb as compared with foundation, so strong that the drawn comb will be first accepted, whether the compartment in which the drawn comb is found be large or small.

Marengo, Ill.

The Hamilton and Keokuk Meetings

BY FRANK C. PELLETT.

THE dates selected for the Hamilton field meet and the Keokuk conference were very fortunate. Favorable weather this unusually wet season was hardly to be expected, but the weather was lovely. The attendance was gratifying since beekeepers came from long distances to attend the meeting. Iowa was especially well represented, many coming from one to three hundred miles. Not only did they come from the three States of Iowa, Illinois and Missouri, but a number came from several other States as well. Automobiles were furnished to convey the party immediately to the home apiary and factory of the Dadants, where the forenoon was spent in informal visiting, getting acquainted and inspecting the plant. To many the process of foundation making was some-

Beekeepers in Attendance at the Tri-State Field Meet Held at the Dadant Home Apiary at Hamilton, Illinois, September 7, 1915

thing new, and much interest was manifested in every stage of the work.

When the dinner hour arrived the guests were seated at long tables where they were served with a bounteous spread. The ladies of the Presbyterian church had the dinner in charge, and seldom has the writer seen such a crowd served so promptly and well. The hungry crowd, many of whom had been traveling for 24 hours, did ample justice to the meal.

Seats were provided under the big trees where for many years the late Charles Dadant had delighted in caring for his bees. No set program had been announced for the day, but several prominent men were called upon for short talks. N. E. France, State Inspector of Wisconsin, E. R. Root, editor of Gleanings in Bee Culture, Dr. E. F. Phillips, of the United States Department of Agriculture, Dr. L. H. Pammel, Botanist of the Iowa Agricultural College, Frank Coverdale of sweet clover fame, and others gave interesting addresses. During a short recess in the program the crowd posed for the picture shown in this issue.

Late in the afternoon the automobiles were again called into service to convey the visitors to the big dam across the Mississippi river. A special guide was provided to conduct the party through the power house and to explain the wonderful machinery by which the electric current is generated. The street cars of St. Louis are run by power from this plant, and her streets are lighted from its electricity also.

The visitors were invited to the home of C. P. Dadant to spend the evening. A most pleasant hour was spent in listening to personal recollections of prominent beekeepers who have passed on. Mr. E. J. Baxter told of Charles Dadant, E. R. Root mentioned interesting visits with Langstroth, N. E. France gave an account of his acquaintance with Adam Grimm, and both Root and France were called on to tell something of their impressions of W. Z. Hutchinson.

So much regret was expressed because Dr. C. C. Miller was unable to be present that Dr. E. F. Phillips was asked to give his impressions of the most popular living writer on beekeeping.

The following morning the automobiles were ready to convey the guests to the historic town of Nauvoo. Many interesting things were seen on this trip, among which may be mentioned the former homes of the Mormon leaders, Joseph Smith and Brigham Young. The party also visited the home and apiary of E. J. Baxter, president of the Illinois State Beekeepers' Association. The pressure for time in order to get back to Keokuk for the second days' meeting made it necessary to forego visiting some interesting points.

The forenoon session at Keokuk was given over to the study of honey-producing plants. Dr. L. H. Pammell gave an address on "Place of Botany in the Beekeepers' Education," which will be reproduced in the Bee Journal, after which he identified a large number of flowers and plants brought in by Miss Mitchell, of Keokuk, and answered questions concerning the honey-producing flora.

The afternoon session was given over to the conference of bee inspectors and problems of inspection and control of disease were discussed. N. E. France proposed joint action of the inspectors of the various States through the United States Department of Agriculture. Since there is always difficulty in controlling disease along the borders of a State because of its presence just across the line, Mr. France's suggestion seemed very timely and he was appointed to represent the inspectors and Dr. Phillips to represent the Government in formulating a plan of action.

A paper by Mr. J. E. Crane, of Vermont, was read, as Mr. Crane was unable to be present.

Dr. Phillips outlined some important work in connection with the inspector's official duties. He especially called attention to the importance of the educational work which an inspector is in position to do. Several inspectors were present and it is believed that important results will come from this conference. The discussions brought out the need of information as to how European foulbrood is spread. At present there is no definite information on the subject. There are plenty of guesses but no positive knowledge.

Nothing was overlooked to add to the comfort or convenience of the visitors. A few were missed at the trains because the drivers did not recognize them, but as soon as they were located they were well cared for.

Arrangements were made for another interstate meeting next year, the time and place to be settled by a committee composed of N. E. France and the presidents of the Iowa and Illinois associations. Some city along the Mississippi river will probably be selected.

Atlantic, Iowa.

Selling Honey by Mail

BY DR. A. F. BONNEY.

I HAVE made several adventures into the domain of advertising to sell honey by mail, and find one serious handicap, the breaking of containers by careless mail clerks and others who handle the sacks. These men, or many of them, seem to have an inherent hatred of parcel post packages that are at all heavy, and a "fragile" tag is little or no protection.

In this connection let me suggest that it is unfortunate that the laity cannot be educated to know that candied or granulated honey is certain to be free from glucose, in other words, that it is pure, for once the consumers are aware of it, honey producers could let their honey solidify in the containers and thus insure safe shipment.

One man at least is on the right track, for in a catalog of labels recently received I find the following:

"TAKE NOTICE. — As manufactured adulterated honey cannot be made to imitate the granulation or 'candying' of pure honey, granulation has been found to be the only ready test of pure honey. I, therefore, do not ship extracted honey before it is thoroughly granulated by cold weather; I *warrant* every pound put up and shipped by me to be absolutely pure honey as collected from the blossoms by the bees. To restore to the original form and retain the original honey flavor, set the can in warm water and remove cover, but do not heat honey to the boiling point. Let cool before using."

I am seriously inclined to begin using a label similar to the above and send out only solidified honey up to and including 60-pound pails, instructing them regarding the reliquefying of the honey, but urging the customer to first try eating the candied honey. Personally I prefer it to either the liquid extracted or comb honey.

I am now going to suggest that beekeepers begin circulating the fact that candied or granulated honey is pure,

E. R. ROOT, L. H. PAMMEL, F. C. PELLETT, E. F. PHILLIPS, C. P. DADANT, AND N. E. FRANCE—Six of the speakers at the Tri-State Field Meet by the use of stickers similar to the "Eat Honey" ones. Printed from type, on gummed paper, they would be very cheap, and in a short time we could be shipping candied honey in cheap containers, and feel quite certain that the goods would arrive safely. The above labels are quoted at $1.00 a 1000, $2.00 for 5000, or $12 for 25,000. I shall at once commence using an adhesive of this kind, but think I will rewrite it as follows:

NOTICE.—Adulterated honey cannot be made to granulate, so when a lot of honey does candy we know that it is pure. Any honey will granulate if exposed for a time to a temperature below 70 degrees Fahr., but it is very easy to restore it to a liquid form by setting the container into a dish of hot water. The temperature should not exceed 150 degrees Fahr. for fear of injuring the flavor. Honey eaten while granulated is delicious. *Remember*, granulated honey is *pure* honey.

For my individual use I may add: *Honey* bearing my label is guaranteed to be as pure as the bees can make it, and to conform to all requirements of the pure food laws.

Such a sticker put on with the regular label would have great influence, and if made part of the regular label will be cheaper and more effective. It would be well to use them on letters and in public places,, while their use on honey packages is more logical.

Buck Grove, Iowa.

[It may not be amiss to state that the elder Dadant, whose portrait has been at the head of the pages of the American Bee Journal in company with that of Mr. Langstroth for a number of years, placed there by the previous editor, put upon his honey labels, as early as 1874, the following words, which are still used on our labels: "The granulation of honey is the best proof of its purity." We have at all times urged the selling of honey in the granulated form, and would be glad if others would follow the suggestion. We are told that an adulterated product can be produced that will also granulate, but the adulterations as far as we know are always in liquid form.—EDITOR]

A Naturalist of the Old School

BY D. A. DAVIS.

MR. PELLETT IS A CLOSE OBSERVER AND WILL SPEND MANY HOURS IN ANY KIND OF WEATHER IN ORDER TO LEARN A NEW FACT OR CONFIRM A THEORY

MR. PELLETT'S "BUGHOUSE" BUNGALOW IS AN IDEAL PLACE FOR REST AND CONCENTRATION

FEW men would spend one-third of a perfectly good summer in studying the habits of a family of wasps, but to do just such things Frank C. Pellett left a growing law practice to live in the woods. Eight years ago he abandoned the artificial life of the office in town and with his family moved to the country to spend the rest of his days in the intimate contact with wild creatures that only a naturalist knows.

Half of the little farm where he lives, near Atlantic, Iowa, is given over to a preserve devoted to the keeping of native birds, animals and plants. Probably more species of native plants are growing there than are to be found in any similar area of the State, and more species of bird's nests than in a like situation anywhere in the middle West. A haven is offered for all kinds of little animals and reptiles, and species are surprisingly abundant. Dozens of rabbits play about the dooryard, and skunks raise their brood in the outbuildings.

A two-room bungalow on the lawn, called the "Bughouse," serves as a study and houses his library of scientific books and collections of insects and other material dear to the heart of a naturalist. Here, hidden from the eyes of the world he spends uncounted hours in the preparation of numerous manuscripts relating to the creatures under observation and in the pursuit of special studies. Some investigations occupy years of time and require infinite patience. Much time has been spent in special study of birds of prey and the predacious animals. During the past summer a family of gold-banded paper-making wasps has been under constant observation. In a bad storm in July the nest was thrown down and the mother wasp disappeared. In order to continue the study it became necessary to raise the young by hand. After having seen the mother feeding the babies with caterpillars many times, he did his best to follow her example, giving them the bits with a timothy stem. Some of the younger larvæ died, but the older ones were successfully reared.

While most of the studies undertaken are carried on at Tamakoche, as the Pellett country home is called, an occasional journey is taken into the bad lands or mountains or other out of the way place for special material. Mr. Pellett enjoys especially his occasional visits to the Indian reservations, and among them goes by the name "Big Spider."

Mr. Pellett needs no introduction to the beekeeping fraternity, as he has accomplished much in that line. He has written numerous manuscripts and several bulletins on different phases of the science, and at present holds the position of State Inspector of Iowa.

Ames, Iowa.

Cane Sugar vs. Beet Sugar

What is the Proper Proportion of Water to Sugar in Making Syrup?

BY J. A. HEBERLE, B. S.

FREQUENTLY in discussing the feeding question cane sugar is recommended as being preferable to beet sugar for feeding bees. Mr. D. D. W. wrote recently "in regard to the trouble so many have with feeding hard candy, let them take a tip from a professional candy maker, and use only cane sugar—*never beet sugar*." The professional candy maker here can get but beet sugar, yet the candy he makes is all right. All common sugar is called (chemically) cane sugar, whether it is from the sugar beet, from the sugar cane, from the maple tree or any other plant or fruits, and is chemically and physically identical.

Refined sugar is today of such high purity that wherever refined cane sugar is used the refined beet sugar may be used with equally good results. The only difference in the refined sugar in the market may be the minute quantities of foreign matter that may still adhere to it from the raw material of which it is obtained and of substances used in the process of extracting and refining; but the quantities are so extremely small that sugar from the beet and the cane when refined are equally healthy for human consumption and for the bees. The yellow unrefined sugar from the sugar cane may be preferable to that from the beet, owing to the more difficult complicated process and the chemicals used. I am not aware that unrefined beet sugar is offered in the retail market.

If refined beet sugar were not good for the bees, the beekeeper here would have found it out because many thousands of pounds have to be fed to the bees annually. It often happens that the bees gather not enough honey during the summer to last them until next spring. We also have in some parts, especially in the Black Forest and the Vosges, honey from a kind of fir tree that is not suitable for wintering in our climate; the same is true of honey from honeydew. These honeys must be extracted and sugar fed instead. If that is not done and the bees cannot take frequent flights (in our climate they cannot do it) they will suffer from dysentery, and lots of colonies die while others are so weakened that they can gather no surplus. Colonies when fed sugar syrup at the right time, so they can feed during the winter on it, come out without loss, *i. e.*, with but few dead bees.

Formerly ultramarine was used to make the refined sugar very white—the housewife used bluing for the same purpose when washing. Such sugar was boiled, and the ultramarine skimmed off. In Germany the ultramarine is not used any longer in the process of sugar refining.

HOW MUCH WATER SHOULD BE USED IN MAKING SYRUP?

On this question authorities have differed ever since sugar has been used for feeding bees. The amount to be used is given from one part of sugar for one part of water to three and one-third parts of sugar for one of water. Some recommend a small amount of tartaric acid, about a teaspoonful for every 10 pounds of sugar; a little vinegar may be used instead. This is to help, or rather invert the sugar. If the syrup is not boiled it won't invert much. Tartaric acid is not found in honey, and I would not recommend it. I never use anything to aid inversion, the bees do the inverting just as well.

An analysis of fed sugar showed that the syrup not capped contained 19.5 percent, while the part capped showed 20.2 percent of water. Just the opposite might have been expected. The open syrup contained 14.9 percent of cane sugar, the capped 11.1 percent. It has been inferred that the inversion is continued in the cell after the syrup is capped.

ALBUMEN IN FED SUGAR SYRUP.

The analysis showed in the uncapped syrup 0.28 percent, in the capped 0.36 percent of nitrogen. Sugar contains no nitrogen, and an analysis of some of the commercial sugars in the market show a purity of 99.8 percent of cane sugar. So this nitrogen is not present as impurity. The inference made is justified by this analysis that the bees supply albumen to the syrup while inverting it. This albumen in the sugar syrup is of so great importance that the experiment should be repeated.

The sugar in nectar in most flowers is principally cane sugar; the bees invert it and eliminate the excess of water. The greater part of water in nectar, I believe, is eliminated by the bee gathering the nectar, on her way home before she deposits the load in the cell.

Nectar contains much water, but varies greatly. As high as 93.76 percent of water has been found. If the bees can eliminate so much water when gathering nectar, we may be sure they can make healthy winter stores from syrup 1:1, providing it is not too cold. On the other hand, if the solution is too concentrated we may doubt the ability of the bees to supply water.

In making syrup for the bees I would rather err by taking too much water than too little, as Sancho Panza said; he preferred to lose the game by having a card too many rather than not having enough. While not admitting ability of the bees to eliminate water readily, we must take into consideration that they do this in the summer in warm weather, out in the field. For best results we should do our feeding for winter stores early in the fall, say in September. The nights should not be very cold, and all surplus combs should be removed. In warm weather the bees can do the work of inverting, eliminating the excess of water and capping the syrup much better than in cool weather, and—what I consider of importance—may gather pollen which may be needed to supply the albumen they add to the syrup while inverting.

From the above cited analysis we may justly infer that to feed large quantities of syrup means, besides, the work of inverting it. Much work shortens their life, a weakening of the body. A weakening of the body means a loss of vitality, less resistance to disease, a tendency to degenerate. Sugar syrup, if fed early enough, makes unquestionably good winter stores, but for brood-rearing it is greatly inferior to honey, because it lacks the nutritive salts, ethereal oils, etc. I use sugar and cold water, equal parts, and try to be done by Sept. 15, but do not feed more than enough to last until early spring. Feeding late in the fall, a little more sugar than water should be taken, but I would never advise to make it more concentrated than two parts of sugar to one of water. At all times it would be good to add honey 10 percent or more, but especially if late feeding has to be done. I would never advise to feed more than two quarts of syrup every evening, or one gallon every other evening. In feeding only half of this amount the bees would consume probably a little more for themselves while doing the work, but they would be sparing their energy and vitality worth a pound or even two of sugar.

Kempsten, Bavaria, Germany.

No. 10.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(*Photographs by the author.*)

IN the April number some of the mints were described, but for lack of suitable pictures some important ones could not at that time be considered.

MOTHERWORT.

The common motherwort, *Leonurus cardiaca*, is a weed introduced from Europe and Northern Asia. It is now quite generally naturalized from Canada to Florida and west to Louisiana. For some reason it is seldom included in lists of honey-plants, although it is said to be an excellent source of nectar. Reports of bees working on this plant very freely in 1914, when most other plants failed to yield anything, were frequent.

The motherwort grows in clumps in waste places in old barn lots, along railroads, in factory grounds, etc. It grows from two to six feet high with small flower clusters in the axils of the leaves. It is a relative of the catnip, and apparently equally as attractive to the bees. This plant was formerly used to some extent in medicine, especially for diseases of women. It is also known as lion's tail.

Figure 47 shows the blossoms and leaves, and Fig. 48 a clump of the plants.

GERMANDER OR WOOD SAGE.

The germander, *Teucrium canadense*, also known as wood sage, is found in open woodlands and thickets from Nova Scotia to Nebraska, and south to Florida and Texas. It is common in the central States, and is much sought by the bees. The blooming period is long. This season (1915) the bees have been working on this plant in the writer's wild garden for nearly two months, and at this writing (September) are still visiting it. Apparently the plant does not secrete nectar very freely, yet it is an excellent plant to keep the bees at work when they might otherwise be robbing. The writer does not recall ever having seen a locality where it was sufficiently abundant to amount to very much by itself, though it is a valuable addition to the other honey-producing flora. Figure 49 shows the blossom and leaves which bear some resemblance to catnip.

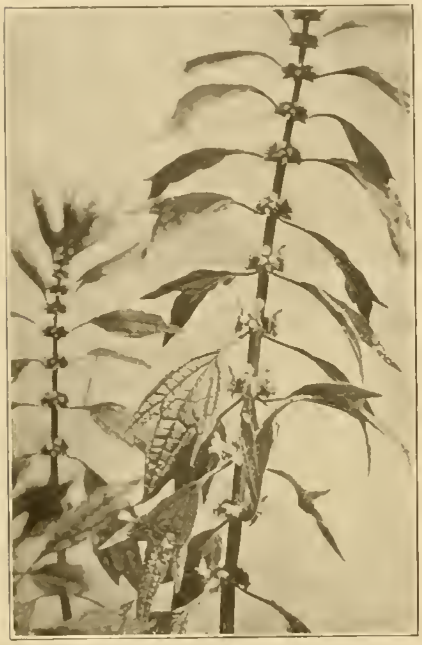

FIG. 47—MOTHERWORT IN BLOOM

VERVAIN OR VERBENA.

There are about 16 species of verbenas in North America, and several of them are widely distributed. Figure 50 shows the blue vervain, *Verbena hastata*, which is found from Nova Scotia to Quebec and Manitoba, south to Arkansas, New Mexico and California, and on the east south to Georgia. This particular species is usually found in lowlands, along streams, etc. Richter, in his "Honey Plants of California," mentions another species, *Verbena prostrata*, as yielding considerable honey in some localities in that State. In Iowa the hoary vervain, *Verbena stricta*, is very common in upland pastures, especially over the north half of the State, and reports of surplus honey from this source are not uncommon.

Mr. Scholl reports *Verbena xutha* as yielding sparingly in Texas. While in the main the vervains can hardly be regarded as important honey plants, in limited localities some species are very valuable sources of nectar. Mr. S. W. Snyder, secretary of the Iowa Beekeepers' Association, reports the blue vervain as quite valuable in his locality, some years furnishing a surplus.

MILKWEED.

The milkweeds, *Asclepias*, are a large family of plants common to the temperate and tropical regions of many parts of the world. North America alone has 55 recognized species. These plants are also known as butterfly weeds and silkweeds. The blossoms are borne in large ball-shaped clusters as shown in Fig. 51. The seeds are attached to silken parachutes on which they are carried by the wind. It is these silky attachments that give rise to the name "silkweed." Remarkable yields of honey are sometimes reported from milkweeds. An average yield of 100 pounds per colony from this source is occasionally reported through the bee journals.

Much has been written about the entangling of bees in the pollen masses of milkweed. It frequently happens that bees thus entangled are unable to free themselves and die as a result. Some species of milkweed is included in nearly every list of honey plants which the author has consulted. Apparently it may be regarded as of some value almost everywhere. The honey is said to be light in color and of good quality.

DOGBANE (*Apocynum*).

When not in bloom the dogbane resembles the milkweed, and is generally called milkweed. There are several species found in Europe, temperate Asia and North America. In the United States there are two common species,

FIG. 48—CLUMP OF MOTHERWORT IN A BARNYARD

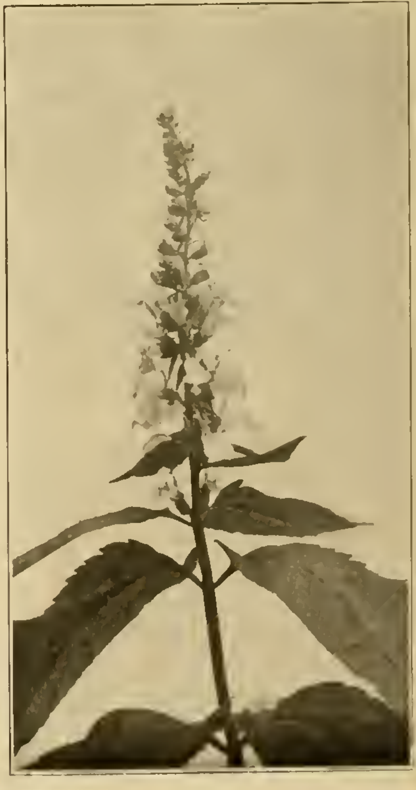

FIG. 49—GERMANDER OR WOODSAGE

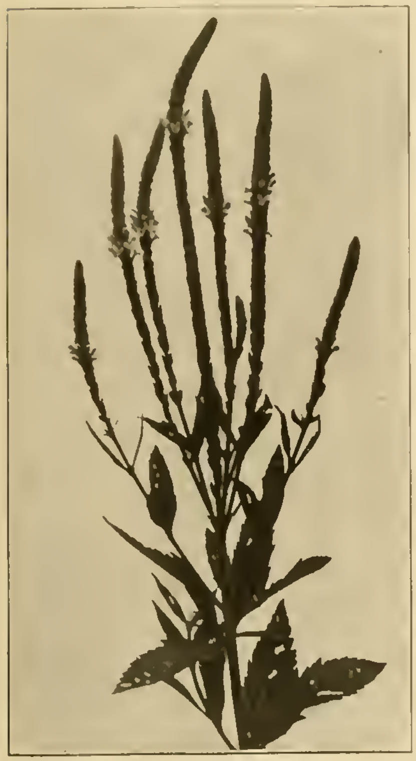

FIG. 50.—BLUE VERVAIN IN BLOOM

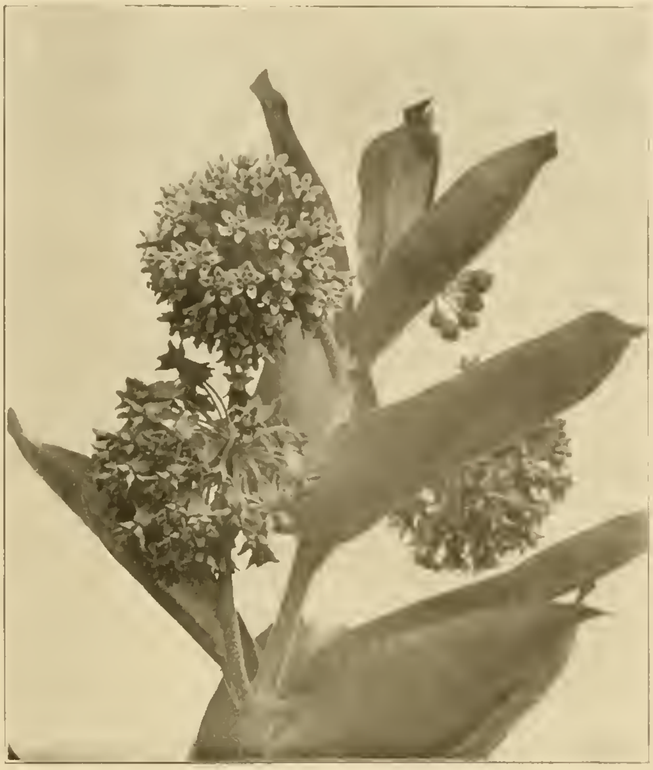

FIG. 51.—BLOSSOMS AND LEAVES OF MILKWEED

Apocynum cannabinum, known as Indian hemp, Canadian hemp or choctaw root, and *Apocynum androsæmifolium*, the spreading dogbane.

Dogbane can be distinguished from milkweed by the finer stem and smaller leaves. The stems are usually reddish in color. By Fig. 52 it will be seen that the flowers are very different. At times the bees work on this plant very freely.

Atlantic, Iowa.

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The Meaning of Feeding-Stock Explained

BY G. C. GREINER.

WHEN I described my method of "Doubling the Yield of Surplus Honey" in the American Bee Journal last spring, I tried to make everything sufficiently plain that even the most recent beginner without any previous bee experience could follow the plan without a misstep. In this I was mistaken, judging from the inquiries for full particulars on one point or another, which I have answered personally. Many things considered perfectly plain and simple by the old timer are shrouded with mystery to the less experienced. I will gladly explain to the best of my ability any points of my previous pennings that are not made plain enough to be understood, if requested to do so.

One writer, Rev. M. A. Dinier, wishes to know what I mean by feeding-stock and the necessary quantity to be required.

By feeding-stock I mean the honey fed to the comb-producing colonies after the honey flow, to finish (cap) the sections that were advanced far enough to begin capping, but removed before much of the capping was done. The object of not allowing our bees to do any capping, or at least no more than can be conveniently managed during the honey-flow is twofold. First, it requires much time and labor to do this work; capping is a slow job, which can be done to better advantage later on, when there is "nothing doing." Second, capped honey is the incentive to swarming. As long as we keep open honey, or better, empty combs (bait sections) in the hive, bees are not so liable to contract the swarming fever. But when honey is capped bees consider their job finished and swarming is the result.

If our object is the production of comb honey exclusively, we must run a small percentage of our colonies for extracted honey to produce this, "feeding-stock." It is somewhat different from the ripe, finished honey of the trade, which we might call, to distinguish it from the former, "market stock." I still believe and agree with the majority of our most extensive and experienced producers of extracted honey, that a prime quality, that will stand the test and gain the confidence of the consumer, must be ripened and capped by the bees. But the former is managed in a different way. It is extracted as soon as the combs are heavy with honey, no time being allowed to ripen or thicken, which would lessen its usefulness for the purpose it is intended, the finishing and capping of our sections.

The colonies set aside for this purpose need only one super. The full combs being constanly exchanged for empty ones, give the bees no chance for ripening, much less for capping. When the honey flow is at its best they fill their combs in a surprisingly short time, so that for best results the exchange of combs may be repeated every two or three days. Bees must have close attention at that time. To leave them alone for two or three weeks and expect them to do their best is out of the question.

The quantity of feeding-stock we need is governed by the number of sections we have to be finished and their state of advancement when taken from the hives. I hardly need to say the farther advanced, the less feed it will take to finish them. Every beekeeper must make his own calculation to meet his individual conditions. There is one essential point we must bear in mind. After feeding is once begun, and this should take place before the honey flow has entirely ceased, bees must have feed before them uninterruptedly until the sections are finished. If a break is allowed to occur, the face of the section is liable to be uneven and notched.

Another important point we must remember: Bees do not always act the same in different localities. My management is especially adopted to my surrounding conditions. Even a distance of 10 miles may require some modifications.

La Salle, N. Y.

Rearing Good Queens

BY J. F. ARCHDEKIN.

IN discussing this subject from a breeder's standpoint, there are several things to be considered. In the first place the most pressing obligation is that of making his product give satisfaction. Here is the real test as there is considerable misapprehension of the qualities of a queen on the part of the customer. So many do not realize that a queen which has spent several days in the mail will not appear to the best advantage. Should she be introduced during a dearth of honey, she is not apt to display a very prolific disposition. Not all people who order queens are members of beekeepers' associations, nor do they all attend conventions, consequently it is sometimes difficult to impress them with the good qualities of the queen. These are only superficial qualifications and are not any indications of the real worth of the queen.

In the first place, a good queen has a right to be well born and well reared. These are the prime requirements, and every queen has an equal right with human beings in this respect. Being well born means to be reared from strong, healthy stock of good breeding. And to be well reared is to be carefully nurtured during the different stages of her life up to maturity.

Being well born brings up the question of what a good queen is. In the first place I hold that she should be very prolific, and prolificness means strong colonies, and this of course means plenty of honey which is the main object to be attained. The bees from such a queen should be hardy; that is, the colony should winter well. This is very important in the colder parts of our country, as most of us will attest. The bees should also be reasonably gentle. Nearly every one will agree with me in this also. Although there are a good many other points which are desirable, it is pretty hard to combine many of them in the same queen. and so I consider the before-mentioned points the main requirements of a good queen. This will hold good in most any race of bees. Of course, a queen should be well marked and of good color. This is understood. Also she should be fairly good size. I have had small queens that were satisfactory, but always discarded them at the first opportunity.

While the breeding of a queen is very important, it is the rearing which has the greatest influence on the quality of her ladyship. To be well reared means that the cells must be built in strong colonies which are maintained in the most prosperous condition. I begin preparing the cell builders as early in the spring as possible, and aim to have them strong enough to fill two hive-bodies by the first of May. I use the double story system exclusively, and after trying out one or two other systems, I have found it the most satisfactory one for my use. While it may have drawbacks it has advantages over other systems which more than offset these faults. On the other hand, its good points are not to be ignored. The principal advantage to my mind is that of giving the whole lower story to the queen to lay in. Hence, she is not crowded, and brood-rearing goes on under most favorable conditions. The whole colony is together on the same stand in a normal condition, and is much easier to maintain. This cannot be said of many other systems. Sealed combs of brood are shifted from the bottom story to the top one as often as is required, and the young bees are thus hatched right where they are needed to furnish plenty of chyle for the cells. This is the object of all systems, and is more satisfactorily attained by this means than by any other I have seen advocated.

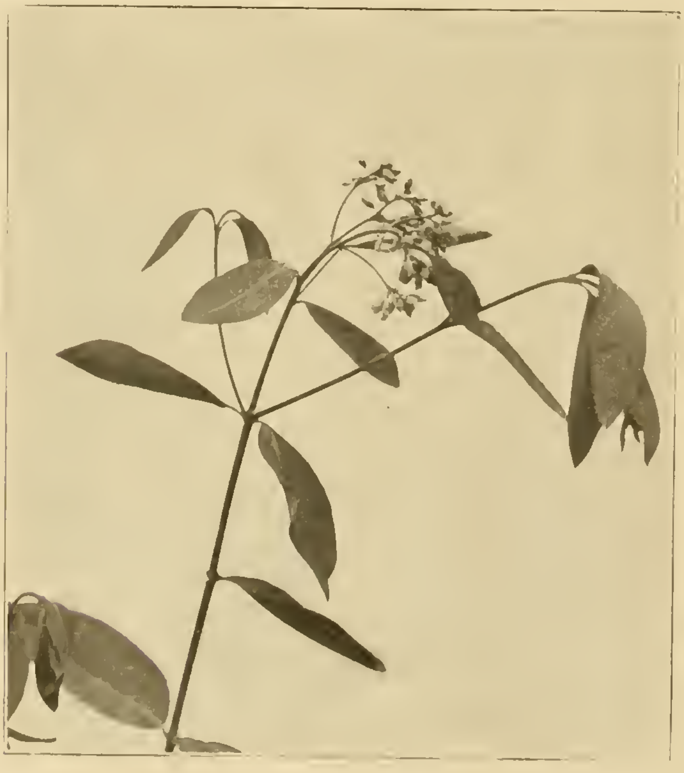


FIG. 52—DOGBANE

For grafting I use the smallest larvæ which it is convenient to handle. By using very small larvæ, they are fed longer before being sealed than is the case when larger larvæ are used, and while they do not hatch as soon after being sealed, still they have a better chance of being long lived and prolific than the others have. In practice I use a queenless colony for accepting the freshly-grafted cells. The grafting is done early in the morning or late in the afternoon. The early morning grafts are allowed to remain in the accepting colony until late afternoon when they are transferred to the cell-building colony. Since adopting this plan I have been able to secure a very large percent of accepted cells, often having all of them accepted.

In order to secure large, well fed cells, it is necessary to have a good flow or to stimulate bees by feeding. During the past summer there was no flow of consequence, and so I was compelled to feed straight through. The cells are caged usually about the 10th or 11th day, as I hatch most of the virgins in captivity. It is preferable to hatch them directly into nuclei, and I do so as much as possible, but circumstances do not always permit it. Also there is some advantage in hatching the cells in cages, as it allows one to sort over the virgins and select the best ones for mating.

For mating the virgins I use the baby nuclei. I find that I can produce as good queens with these little mating boxes as by any other method. While it is inexpensive it produces first-class queens in every respect. They are comparatively easy to manipulate, and one can locate the queens at once, saving much time in caging. One pint of bees is sufficient for each of the boxes, and in a good flow these little colonies will often store considerable surplus, becoming honey bound so that it is necessary to exchange full combs for empty ones. The behavior of these twin nuclei is not as reliable as that of the larger mating nuclei, but if they swarm out, as they will do on the slightest pretext, the loss is not large and is very readily replaced. During the dearth of honey or before the honey-flow, I have found the candy fondant as per the direction in Gleanings in Bee Culture, published a year or so ago, to be very nice for stimulating these mating nuclei. The other colonies are prone to rob out these boxes at the first opportunity, and feeding sugar syrup always causes some muss and aggravates this trouble. Besides, there is no very convenient way of feeding it. Also the fondant being dry does not attract robbers like syrup will. Some kind of feeders adapted to feeding these little colonies is very badly needed.

In introducing the virgins to the mating boxes I use the candy method most exclusively. It is the best reliable method brought out so far. The smoke method is all right in some cases, but I do not recommend it for general use. Soon after the method was given out last year by Mr. Miller, I used it successfully, but this year it wouldn't work at all. There was a world of difference between the conditions last year and this year, and so I put most of the blame on the season. However, I think the method has a great future before it when it is developed a little more. I do not think that all of the factors governing its use are known. Until these factors are discovered I feel that the candy method will be the best one for the ordinary person to use.

Big Bend, La.

Progress in Beekeeping in Germany

BY F. GERSTUNG.

BEEKEEPING in Germany has made satisfactory progress both in theory and practice, notwithstanding the unfavorable conditions of weather and of yield, which, during recent years, have diminished the returns of this industry.

The action of the State in establishing institutions for research and instruction, and the organization of theoretical and practical courses in beekeeping, now held regularly every year in almost all the beekeepers' associations in the Empire, have largely contributed to the progress of beekeeping. Thus in Bavaria, which numbers about 50,000 beekeepers, a scientific institution for the study of bees has been founded at the University of Erlangen; here elementary and advanced courses are held on beekeeping, bee diseases, the breeding of queens, etc., under the direction of Prof. Enoch Zander. This institution is under the general supervision of the Professor of Zoology, Dr. Fleischmann.

Every year scientific and practical courses for persons from all the confederated States are held at the Royal Horticultural Institution at Dahlem, Berlin. The scientific instruction is given by Dr. Kustenmacher (for chemistry, botany, etc.). The practical instruction is given by the writer of this paper or by other leading men of German beekeeping.

The director of the Biological Institute of Dahlem, Dr. Maassen, occupies himself especially with the diseases of bees. It is to a great extent due to him that the etiology of foulbrood has been satisfactorily and scientifically explained; on the basis of the results of his investigations a bill has been drawn up on foulbrood and other contagious diseases of bees, which will probably be discussed and approved by the Reichstag in the course of this year.

The Imperial Sanitary office (*Reichsgeundheitsant*) has published a memorandum on the honey trade, in which it warns German beekeepers of the danger that threatens them in the shape of cheap foreign and artificial honey, and communicates the measures adopted by the authorities and the decisions of the law courts for the protection of beekeepers and of the honey-consuming public. Dr. Dustenmacher published in the *Deutsche Bienenzucht in Theorie und Praxis*, year 1910, a series of articles with the object of explaining scientifically "what is honey," upon which the *Reichsgesundheitsant* published a draft of definitions of honey, which contains the preliminaries and bases for a law on the protection of honey demanded for many years past by German beekeepers. In consequence of the improvements in the methods of examining honey, due to the labors of Prof. Haenle, of Strasburg, Dr. Fiehe, of Berlin, Prof. Langer, of Graz, and others, it has become easier to distinguish with certainty between pure and mixed or adulterated honeys and to prove the kind and degree of adulteration.

As for the special questions connected with the study of bees, which during recent years have awakened most interest, we can in this short review only mention the more important.

The discussion as to the notion of the bee colony still continues. The anthropomorphic theory and the so-called organic theory oppose each other. The first considers the colony as a closed family (called also a State) of several individuals united for the purpose of conservation and reproduction, and who, in consequence of their special endowment and intelligence, are capable of adapting themselves suitably to the structure of their State and of finding out and fulfilling the special function which each has to perform.

The other theory, that of the so-called organic point of view, which has been introduced and defended by us, considers the colony as a whole as a living unit, which, according to its wants for the conservation of the species, develops out of itself special organs in the form of different beings which form the colony. The various functions which are indispensable for the preservation of the whole are correspondingly distributed among its members according to their age and sex.

The preservation of the colony is not based on the free choice of functions by each member, which presupposes a certain intelligence in the bees, but by the difference of the physiological structure of the individual members and of the whole colony, caused by the conditions of their life, from which arises the capacity for the necessity of the various forms of activity for the conservation of the whole, to the exclusion of the free choice of functions on the part of the individual. The organic point of view has found decisive scientific support from the recognition that certain organs develop and begin to function only at certain periods, and after having fulfilled their duties disappear again.

It is known that the wax glands do not develop their full functional activity until about eight days after the emergence of the young bees and then retrograde until they cease to act; further, that the young nurse develops to its full perfection a gland which is only found at this stage, but which is necessary for the digestion of pollen, and that this gland gets atrophied as soon as the bee has passed the stage of nurse bee and has become a worker. This shows clearly that the most important functions for the preservation of the colony and of all its members are connected with the various ages and with corresponding physiological states and anatomical transformations. The organic theory recognizes logically a rigorous division of work, which *represents the real basis for all the measures adopted in the practice of beekeeping*. It adapts its methods as possible to the biological laws of the colony, and endeavors to practice systematic beekeeping. The organic theory of the bee colony and its consequences for the theory and practice of beekeeping are treated *in extenso* in the book *Der Bien und seine Zucht*, 4th edition.

The question of *parthenogenesis*, which has been so much debated during the last 60 years is again the subject of lively discussion. The most minute investigation into the eggs of bees has proved that the original opinion of Dr. Dzierzon is still scientifically well founded; according to his theory the male members (drones) issue from unfecundated eggs, while the female members (queens and workers) hatch out from fecundated ones. Dr. Nachtsheim, of Munich, has furnished scientific proof of this, while Prof. Bresslau, of Strasburg, has recognized and described the mechanism of fecundation. Nevertheless, even these new discoveries fail to explain how the queen is capable of fecundating her eggs or not, according to their destination.

On the *origin of the bee pap* which the young larvæ get during the first four days of their development, no unanimity of opinion has been attained in spite of intense investigation. Prof. Zander and others uphold Schiemenz' views, according to which the nutriment proceeds from the glands of the head and thorax of the young nurse bees. Dr. Kustenmacher shares Leuckhart-Schonfeld's opinion, namely, that the chyle stomach produces the bee pap. The latter considers the chyle stomach as the seat of the production of propolis.

It is satisfactory to note that of late years eminent zoological scientists have turned their attention to investigations on bees, and one may hope that before long many obscure points will be cleared up.

Practical beekeeping in Germany has, during the last ten years undergone far-reaching changes. The most striking is the change from the fixed (basket) or skep hives to the movable bar-frame hive, and in the latter from the system of hives having the opening behind to that with the opening above. Quite recently horizontal hives have taken the place of vertical ones, and lastly, large hives are used instead of small ones.

The completely changed conditions of the honey-bearing flowers, which have converted the districts in which formerly the honey was gathered late into early yielding districts, have led to fixed hives falling more and more into disuse and being now almost limited to the heaths. In East Prussia, where formerly only basket hives (Kanitz hive) were common, the so-called mixed system prevails; that is, the Kanitz basket hive is used as brood hive and for winter quarters, while a large lift with movable-bar frames is placed on it for the honey. In this way it is possible to obtain centrifugated honey without destroying the combs. Nevertheless, the new bar-frame hives are continually spreading in East Prussia.

In 1880, at the meeting at Cologne

uniform dimensions for the bar-frame hives, which are still frequently called Dzierzon or Berlepsch hives, were fixed upon, the so-called *German-Austrian standard* (8.79 inch wide by 7.29 inch high for half frames and 14.58 inch high for whole frames). It soon appeared that these dimensions were not favorable to the development of the colonies. The early collection of the honey demanded a numerous population already in May and June, to be able to utilize completely the season which was often very short. This was not, however, possible with the standard hive, except with much trouble and difficulty, by enlarging the brooding space and similar measures.

At the same time as the insufficiency of the standard measures was recognized, the discovery was made of the laws which govern the making of wax and of the brood-cells, which was to prove of the greatest importance in the construction of hives. With the demand for more space for the development of the colony was added the demand for *space corresponding to the population.* Thus, scientific dimensions were introduced into Germany during the last 20 years, and they have given satisfaction throughout the country. They are the following: 15.75 by 9.84 inches or 155 square inches for the comb without the wooden frame, and nine such combs afford the colony a sufficient brooding space. These dimensions, wherever they have been applied with understanding, have given the best results, and it seems that their substitution for all the others will be only a question of time. It is hardly to be expected that these will ever be replaced by other dimensions, as with them the habitation of the colony is made according to its requirements.

This brood-comb enlargement has been adopted in many systems of hives which formerly used the standard dimensions, as for instance the Berlepsch, the four-storied Liedloff, the Alberti, the German-American and other hives. Most modern hives are built according to these dimensions.

On the introduction of this modern system the influence of America was felt. Almost all the American forms of hives prefer the isolated position of the colonies in the open under a separate protecting roof, which naturally suggested the idea of handling the colony from above. This method at first seemed strange and unusual to German beekeepers, who mostly kept their colonies in bee houses and handled them from the back of the hive. The handling from above and the new dimensions encountered many difficulties, and had to struggle with much prejudice, but with time all hostility has been overcome. When, during the last five years the horizontal hives became the fashion in Germany, the handling from above, which a short time previously was held to be impossible, began to be considered quite natural.

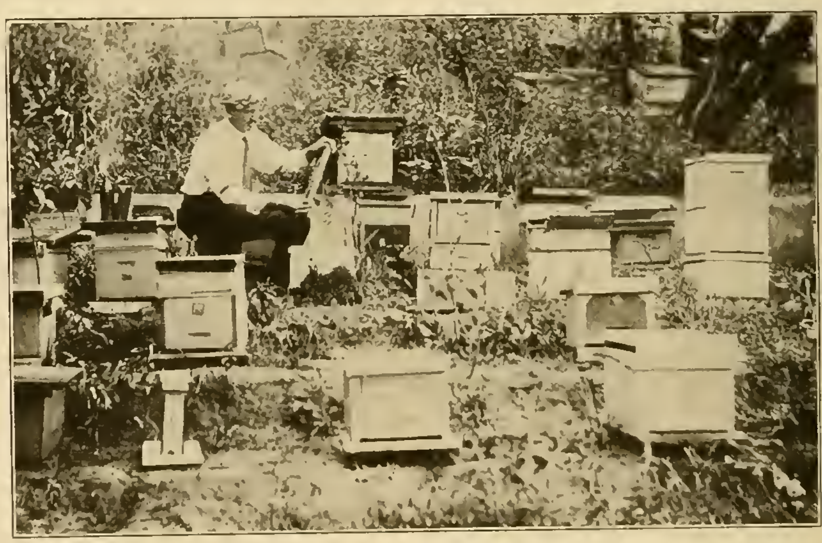
When the systematic dimensions were introduced the vertical hives were preferred, that is, those with high frames. For countries without late honey these hives are even now the best form, as they oblige the colony to provide first of all the necessary store of food for the winter and to deposit it overhead, before bringing the beekeeper's share into the lifts. These hives, by their special build, prevent the pernicious practice of feeding with sugar and causing the degeneration of the bees.

Certain conditions of the honey crop (fir and heather honey, etc.) render it necessary to remove all the honey from the body box or to collect as comb honey all that which cannot be removed by centrifugation. This is not easy with the vertical hive; consequently, by the side of the vertical hives, have been introduced the horizontal ones, in which the modern brood-comb is simply set on its end without altering its dimensions. It is advisable to build the horizontal hives with the frames at right angles to the side which bears the alighting-board and entrance.

The horizontal hive induces the bees, without any effort on the part of the beekeeper, to deposit all the honey they collect in the lifts, whence it can be easily collected. This can cause the body box to be completely freed from honey when the booty is not heavy and sometimes in very poor years it can even endanger the existence of the colony.

An unforeseen difficulty in the way of adapting beekeeping to the changed conditions in the supply of honey-bearing flowers arose by the introduction made some decades ago of foreign breeds of bees, which hybridized the native bees that were well adapted to their environment, and in most cases spoiled them. It became necessary to breed, by selection, a bee suitable to present conditions. This was no easy task, as it is not possible to select a particular male (drone) for the mating. The impulse to the scientific breeding of queens, from both the theoretical and practical points of view, came from America. Von Stachelhausen worked out several sure methods and introduced them into Germany by his book: *Der Bien und seine Zucht.* The Swiss also, under the leadership of Dr. Kramer, of Zurich, have devoted much care to the breeding of queens, which at present awakens much interest in Germany and is practiced with success.

The recent investigations into the



ASSISTANT INSPECTOR I. E. PYLES IN THE J. R. RILEY APIARY AT BREEDS, ILL.

APIARY OF BAXTER BROS., AT LEAVENWORTH, KANS.
The two sons of E. J. Baxter, President of the Illinois State Beekeepers' Association, located on an 80 acre fruit farm last spring and keep bees in connection

laws of heredity have yielded new principles and methods in the selection of breeding stock and of breeding, so that at present methods founded on scientific bases can be employed to obtain, by means of selection, the desired qualities.

In conclusion, the following are some statistics concerning bees and honey. On Dec. 1, 1912, the total number of bee-hives in the German Empire was 2,619,891, the highest on record. East Prussia, Wurttemberg and Baden have had the greatest increases. The importation of wax amounted to 2952 tons, worth 409,500 pounds, the exports to 1430 tons, worth 210,500 pounds. Duty was paid in 1912 on 129,360 pounds of honey.

German beekeepers attempted in 1913 to unite all their associations into one in order to defend their interests vigorously, but they have not yet succeeded in the proposed unification.

[America has some cause to be proud of this late progress in German beekeeping. The hive described has frames just a little smaller than those of the Dadant-Blatt hive adopted in Switzerland some 25 years ago. It is evidently a copy of that hive. The contents of the brood-chamber are a trifle less than those of the 10-frame Langstroth hive. The top-opening system is thoroughly American, and in strong contrast with the Berlepsch side-opening system. The next thing needed now is for them to do away with their hybridized native bees by rearing enough of the better races to entirely change the strains, as has been done in many States of America. We have much to learn in science from Europeans, but our people can lead them easily in actual practice.—EDITOR.]

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Stingless and Other Races or Bees—12-Frame Hives

1 What is the stingless bee, and is it as good for honey gathering as the bees that sting?

2. Are all breeds of bees of the same size? If not, which are the largest breeds? What is the main color of the so-called gray Caucasians? Are they gray or black, and are they as good workers as the Italians?

3. What is the difference in 3 band, 5 band, leather colored and golden Italian queens, and will the young bees that come from these queens be of the same color as the queen herself?

4. Would a 12 frame hive be all right to use up here in northern United States? Would the bees swarm as much as they do in 8-frame hives, or would it prevent swarming?

WISCONSIN.

ANSWERS.—1. Stingless bees are of no interest to practical beekeepers, can't live in the North, and are of little value in the tropics.

2. Honey bees are practically the same in size. Caucasians look so much like common black bees that you couldn't tell them apart by their looks. Opinions differ as to their gentleness and storing qualities. While some prefer Caucasians, the majority prefer Italians.

3. When talking about these kinds of bees, the workers and not the queens are considered. A queen that produces 3-banded bees may be quite dark, but a queen that produces 5-banders or goldens, is generally quite yellow, although queens are not by any means always like their workers in color.

4. Some use 12-frame hives with great satisfaction. Although they will not prevent swarming entirely, there will be much less swarming than with 8-frame hives, and with them you should get as much honey.

Spreading American Foulbrood—Other Questions

1. After shaking one or more colonies of bees that had American foulbrood, should the smoker and all tools used be disinfected? If so, how? I put the smoker, gloves, veil, etc., in a jar and poured on them lots of gasoline, then I covered all with many sacks, weighted them down, and left them this way for one week. Do you think this will be sufficient? The gasoline was still strong and would burn vigorously after one week.

2. One of my affected colonies I moved to my home about eight blocks and screened the entrance, the big side was up. I thought they might, in flying out, go back to their old stand, and others might get in some of my other colonies. I put them in a shady place, I brought them home at 10 o'clock a.m., and at 5 p.m. they were all smothered, having clogged up the entrance. Where did I make my mistake? They were shaken on full sheets of foundation and the foundation now has small specks of honey all over it. Is it safe to use this foundation and frames for another colony?

3. The bee inspector was here not long ago and found most of the bees affected with American foulbrood. Now, isn't there much danger of him spreading this disease by the tools he uses, and also with his hands? He did not disinfect his tools in a half day's work.

4. I have hybrid bees, and they are very cross. I am going to buy queens, and thought I would get Caucasians. I run for extracted honey. Do you think I would have much trouble with them swarming?

5 Is there much difference in the Italians, 3-banded, golden or leather colored? If so, which do you prefer?

6. Do you think it safe to use frames (that had American foulbrood) that were boiled for 20 minutes in water with lots of lye in it?

7. The thin super cover you use under your zinc-covered hive cover, does it break easy when being pried off? I thought it being so thin when the propolis gets thick it might not last long.

8. How are extra queens kept during the winter months?

IOWA.

ANSWERS.—1. I don't believe gasoline kills the spores, and so I doubt its being an effective disinfectant. A solution of carbolic acid is used by some. Even carbolic acid does not destroy the spores, and I am a little bit doubtful of the need of anything more than soap and water, only so that any remains of the disease may be removed.

2. Evidently it was a mistake to confine the bees so closely after the excitement they had been through. A screen over the top would have been all right. The foundation can be used if all the honey on it be thoroughly washed off.

3. I have much faith in the intelligence and carefulness of Iowa inspectors, and have little doubt that all proper precautions were taken. A tool might be used all day without getting any of the diseased matter upon it, in which case no disinfection would be needed.

4. I don't know. Some Caucasians are reported exceedingly gentle, and some cross, and I suppose there is a difference in their swarming.

5. The 3-banded, leather-colored are generally preferred.

6. Probably there would not be much danger, if any.

7. I use nothing but the regular hive cover over supers, so have no experience.

8. In nuclei, if at all.

Packing for Outdoor Wintering

I winter my bees on summer stands; all my hives are 10 frame, and about one-half double walled. I am thinking of making cases covered with a good quality of roofing to slip down over two or more hives, and then pack the space between hives and case-box with straw. We bale our straw, and as a consequence can get solid straw "cakes" to slip between, then put lid on that will slip down over the top a few inches (3 or 4). The cases will be like a hog crate without any bottom, and covered with roofing. I can have two thicknesses, one on the outside and one inside of the crate, if thought best. They will be light, and can be slipped on over at the beginning of winter and then the cover put on. Do you see any objections to this protection? Should moisture be absorbed by the straw the lids could be taken off days that would dry it, as they will be light to handle.

OHIO.

ANSWER.—I would give more for one winter's actual trial than for the guesses of all the experts in the world. And that one winter might be different from succeeding winters. There is some danger that too much protection may be given, so that when a warm day comes the sun may make too slow work in warming up the hive so the bees shall fly.

It is generally considered that the most important part to protect well is the top, and the least protection, if any, on the south side. There surely should be advantage in having more than one hive in the same covering. On the whole, I should expect your plan to be successful.

Queens and Swarms—Put Up Plan

1. I want to tell you of a colony of bees I have which swarmed on May 30, June 30, and July 30. Each time they were treated by the put-up plan. I want to ask what to do with this queen? She has swarmed out three times so far, and has made twice as much surplus in sections than any other colony I have. She is a nice large queen, very prolific, but I don't like this thing of swarming. Would you breed from such a queen? I like her because she has such nice workers, busy all the time, and, as I said, made me more surplus by far than any other colony.

2. I want to tell you how I get my good queens when a colony swarms out I treat them as I said before by the put-up plan, but I take three frames of young brood from three different hives which are about equal in stores. I then put these frames of brood in an empty hive and then shake very nearly all the bees into this new hive, set the supers on top, then the parent colony on top of all, as you advise in "Fifty Years Among the Bees." In ten days I take these three frames and make three nuclei, one in each compartment. I cut out all cells but one on each frame, and if either is lacking of a nice cell one is cut out and fastened on it with a staple, then a nice frame of brood is added to each and a frame of honey. I think this way of rearing queens is the best, as the cells are built by a colony which under-

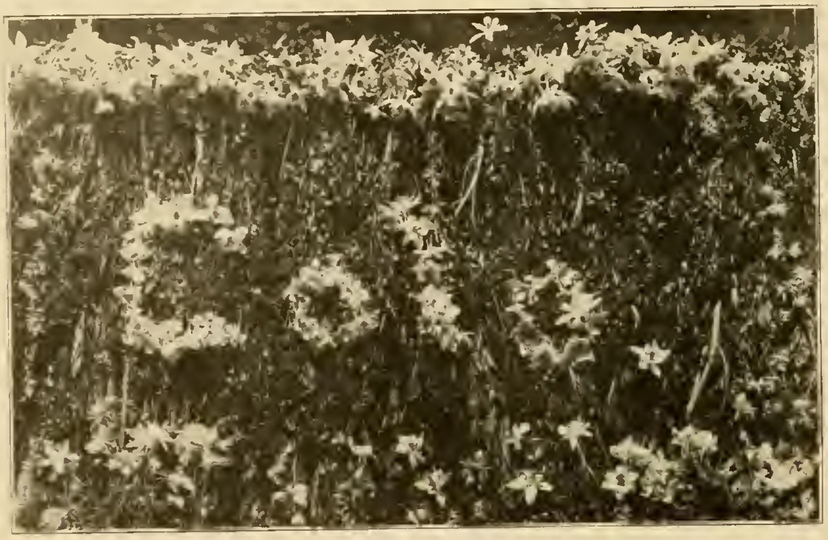
stands cell building, and I get 100 percent queens; at least I have so far. What do you think of this plan of getting good queens?

3. Have you ever had this to occur, treat a swarm on the put-up plan, and after two weeks they swarm out with a young queen and leave the old queen in the hive? I was very much surprised to see this just recently. I found only one cell in the hive, and that one was the one which was hatched and the young queen came forth with the swarm. The hive was full of brood, but no other queen-cell was visible. I treated them by the put-up plan. I found the old queen which was clipped in the parent hive.

INDIANA.

ANSWERS.—1. Generally, after a colony has been treated by the "put-up" plan, there will be no more swarming for the season, but you can never be certain of it. Yet it is a rare thing that a colony swarms a third time, as in your case. Yet I should not be much afraid to breed from such a queen if the colony greatly exceeds other colonies in storing.

2. Your plan of getting queens is good, and is given in "Fifty Years Among the Bees," only I do not take brood from three different colonies. Instead of that I take one or more frames of brood from the best stock. Unless you have three colonies that are equal in worth, your plan will not give as good queens as you will have by taking brood only from the best. You say you destroy all but one cell. That is well in a full colony, but hardly wise in a nucleus. For in the nucleus the bees will take care of the matter themselves, with no thought of swarming, and will be a little more sure then to have the best of the virgins left.



COLORADO COLUMBINES—Photograph by Gale H. Patterson

3. For a virgin to go with a swarm, leaving the old queen in the hive, is something that very rarely occurs, but it may happen.

Wants Instruction and Organization of Bee Associations

1. I wonder if it would be possible to have, in this city, some instructors or bee meetings like I read about? We have several beekeepers, the most of them are farmers, but several are here in town; none of them know very much about beekeeping. The most of them catch a swarm and keep it until winter and then kill it to get the honey. What I have reference to is this, is it possible to have some one come here to make a speech on bees and bee culture and then perhaps organize a beekeepers' association?

2. I have a colony in a common store box. How can I transfer them into a regular beehive, and at what time.

3. I see every day in front of one hive some dead bees and white worms and white bees I think they are young bees. What is the trouble?

NORFOLK, NEB.

ANSWERS.—1. If you write Frank C. Pellett, of Atlantic, Iowa, he can probably do something toward informing you in the line you desire. He is Iowa's foulbrood inspector, a man of whom Iowa ought to be proud.

2. Probably you will do well to leave the bees where they are until they swarm next year, then hive the swarm in an up-to-date hive, and 21 days later break up the old hive.

3. Likely the work of the bee-moth or waxworm. They are quite troublesome with weak colonies of black bees, but Italians keep them under control. If your bees are mostly of black blood, you will do well to introduce Italian blood.

Miscellaneous Questions

1. How long may I keep queens caged (after they have commenced to lay) without danger of injuring them?

2. Wouldn't it be better to cage them on a comb of unsealed honey, on the push-in-cage method, than in cages with candy?

3. Are not queens reared from the egg better than those reared from the grub?

4. If I brush the bees from my section honey and put it in folding cartons, such as are listed in supply catalogs, right in the bee-yard, will I be bothered with the bee-moth in my honey, and will this not save trouble of fumigating? Of course, this honey will be well sealed before putting in carton.

5. Will I be bothered with brood in sections if I use only starters? I mean without excluders.

6. What make section press and foundation fastener do you use? Do you use thin or extra thin foundation in sections?

7. Why do some queens' wings sit up something on the same order of a worker-bee and some lay flat and smooth to her back? I have noticed those with smooth wings are generally more prolific than their high winged sisters?

VIRGINIA.

ANSWERS.—1. I don't know. No doubt something depends upon circumstances. If a queen should be caged in a hive among her own bees, so that they can feed her, she would likely endure confinement several times as long as she would if the cage were left out of the hive with candy for the queen to eat. I have often had a queen caged in her hive 10 days or so with no apparent harm, and my guess would be that she might stand it three to five times as long. Caged outside the hive, 10 days might be all or more than she would stand.

2. The way you suggest would be better if the queen be caged in a strange colony; if caged among her own bees there would be no advantage in it. For in that case the bees feed the queen, which is probably better than for her to feed herself.

3. I don't believe they are if the grub be young enough. Scientists tell us that during the first three days the food to the queen larva is the same as to the worker larva, only in larger quantity. But it is likely the worker gets all it can eat; so theoretically a queen reared from a worker larva three days old should be as good as one reared from the egg. I think, however, that a larva of less age is better, because when bees have their choice they select one younger; I think not more than perhaps a day and a half old. Such a queen is probably as good as one reared from the egg.

4. No, you can't trust to anything of the kind. Years ago, if I took off sections and kept them where no moth could touch them, within two weeks tiny worms would appear here and there. The only way I could understand it was that the moth must have gotten inside the hive and laid eggs on the sections. Of late years I have no trouble of the kind, probably because of Italian blood.

5. Likely, unless you have more drone-comb than desirable in the brood-chamber. For the bees will build drone-comb in the sections and the queen will lay in them.

6. The Hubbard section-press, the Daisy fastener, and thin super foundation.

7. I don't know. If a queen, when at rest, does not have her wings folded together flat, which very rarely occurs, there is likely some little defect. But that may not hinder her being a good queen to lay.

Virgin Going With Swarm

I have been considerably puzzled by a case called to my attention in which a party claims that a hive of bees swarmed with a virgin queen, leaving a clipped queen at the head of the colony.

I have been under the impression that the bees or the virgin queen generally kill the old queen on account of her inability to leave with the swarm.

COLORADO.

ANSWER.—You are right in your impression as to the bees of the virgin putting out of the way the old queen; at any rate, when a colony with a clipped queen swarms, and the beekeeper does not interfere, you may count upon the old queen turning up missing a week or more after the issuing of the prime swarm, and the colony swarming with the virgin. But I think I have seen reports of rare exceptions. At any rate, it is not impossible that the old queen might be suffered to remain, perhaps both queen and virgin going with the swarm, and then the old queen crawling back into the hive.

A Beginner

I am inexperienced in the bee business but anxious to learn. March 20, 1915, I secured one old-fashioned box hive of bees. They were pretty good hybrids, but did not swarm until June 26, when a fine swarm came out, and as I had secured three 8-frame dovetail hives, I had no trouble to get them to set up housekeeping at once in one of them. They have been strong from the start, and on looking in the hive some two weeks ago I decided they were ready for the super, so I put one on filled with sections and foundation, but they did not seem to take kindly to the upper story. On Aug. 13, this prime swarm sent out a fine big swarm.

Now, will this colony make enough to live on? I gave them full sheets of foundation, and the white clover seems to be at its best, now, has a vigorous growth and sending out lots of bloom also a good show for fall pasture of all kinds? How will a beginner know if they need feeding, and how would you advise to begin? Wait until bloom is all gone? How can I tell how much honey they have in hive—some say 25 pounds per colony? MISSOURI.

ANSWER.—Like enough they will gather enough stores for winter, although I should put more faith in fall flowers than in the clover, unless things are different from what they are in my neighborhood, for although there seems plenty of clover in bloom the bees don't seem to get much from it. There are seasons, I don't know why, when clover shows plenty of bloom without yielding nectar, and even in the best seasons clover doesn't seem to be of any use late in the season.

You might weigh the hive and its contents now, and again after the fall flow is over, and if it has gained 25 pounds in weight there is probably enough for winter. That would probably mean a difference of more than 25 pounds in honey, for there is more brood in the hive now than there will be at the later weighing. You can also make a pretty good estimate by inspection. You should find enough honey in the hive, if all put together, to fill full four or five combs, including the pollen that will be present. If the amount falls short, and you have no honey to feed them, then you can feed sugar syrup in the way advised in your bee-book.

Blossoms, But No Honey

This spring I put a super on one of my colonies, and on Aug. 1, it was about two-thirds full. I put another one under the full one. They stopped working in it; why is it. There was a lot of buckwheat in blossom. MICHIGAN.

ANSWER.—I don't suppose the change you made in supers had anything to do with the stopping of storing. It just happened that at the time you gave the second super the flow ceased. Even if much buckwheat bloom was in sight, it may be that it yielded no nectar, which is not a very unusual thing.

Swarms—Afterswarms

1 Will bees work on alfalfa and pea blossoms?

2. How long after a young swarm comes off will it put out a swarm of its own?

3. How late will a swarm come off and put out a swarm that same year?

4. What is the reason that the bees gnaw down the foundation starters in the brood-chamber? I have found two or three starters lying at the bottom of the frames. A few days later I found a strip that they had carried out in front of the hive.

5. If a swarm lights on the grass and you do not happen to see the queen, how would you hive them?

6. Is there any danger of clipping the queen's wing too soon or before she takes her mating flight?

7. Would it strengthen a colony to cut out their first queen-cells and leave the next ones if you wish them to swarm?

8. I thought I saw a few black drones in an Italian colony. Do you think I was right or was I fooled in the kind of bees?

9. It has been cold and rainy this spring. Do you think the bees will have time to make 28 pounds of honey before fall? About how late would they have to start?

10. My bees swarmed May 31. I put on a super that noon, and 11 days later they put off another swarm. What was the matter with them? They have not started to build in the super yet, and the new bees are still bringing in honey in the bottom. What is the reason?

11. Can I put another hive body of the same dimensions, with frames of brood, over the one to strengthen the colony to keep them from swarming, and still go on with comb or extracted honey? MICHIGAN.

ANSWERS.—1. West of the Mississippi alfalfa is a great honey plant. Farther east bees pay little attention to it. Yet one day this year I saw the bees busy on it. I have never heard of the pea as an important honey plant.

2. Two weeks or more; but generally not at all.

3. I don't know. In a place with a strong flow late enough, I suppose it might be as late as September. But it would be a thing not likely to happen in a hundred years.

4. The starter may have been insufficiently fastened; there may have been something objectionable about the foundation; it may have been that the bees were not gathering, and at such a time they will gnaw foundation as if in pure mischief.

5. Set the hive on the ground with the entrance close to the bees, put a few at the entrance, and let the rest follow.

6. Great danger. If you clip her before mating she will be a drone-layer if she lays at all

7. There might be more bees by such delay in swarming, and that would strengthen either the swarm or the colony.

8. Nothing strange about it. Drones are freebooters, and in prosperous times will be accepted in any colony. So black drones may have come from some other colony. It is also true that pure Italian drones are sometimes very dark when the workers are properly marked.

9. Sure. They might start any time in the fall if there's forage enough after that time.

10. It is the usual thing for bees to send out a second swarm about eight days after the prime swarm, and it may be as much as 16 days later. They may also send out a third, fourth swarm, or more, and even if they send out only one swarm they are not likely soon to do anything in super, if at all.

11. It would interfere with comb honey, but not with extracted.

APIARY OF GALE H. PATTERSON, AT CEDAREDGE, COLO.

Why Do Some Swarms Return?

It has occurred three times that bees swarming and settling, even going into hives by themselves, have returned to the old hive, although the queen wasn't clipped. What was the cause? PENNSYLVANIA.

ANSWER.—That might happen with an old queen having defective wings, or possibly too heavy with eggs to fly. It happens more often with a virgin queen when she goes on her wedding flight. For some reason the bees go with her, regular swarm fashion, and then return to the old place.

A Superseding Swarm

On Aug. 13, a small swarm of bees issued and clustered near by. There were hardly enough bees to fill half a gallon can. As the swarm season is over long ago, I took this for a case of supersedure, especially because only a few colonies had swarmed this season. Am I correct? INDIANA.

ANSWER.—You are quite likely correct, the bees have reared a young queen to supersede the old one, and when the young queen takes her mating flight some of the bees swarm out with her.

Tiering—Returning Unfinished Sections

1. How high do you tier up? I am using the Townsend way by putting an extracted comb on each side and sections in the center, and on some hives I use shallow extracting frames filled with comb. I find these were one-half to three-fourths filled with honey by June 16, and have put supers filled with sections under the partly-filled ones.

2 The weather here has been cool and rainy, giving the bees but little chance to work, still they have stored some honey. There is lots of white clover, and I think it will last from three to four weeks without any rain. With these conditions I think it will turn out all right.

3. If I use Dr. Miller's plan of taking off honey, taking the filled and capped ones, are the unfinished ones returned to the same hive and in place of the ones taken out new sections put on, or do you fill this super with other partly-filled sections taken from another hive?

4. When do you give a newly-hived swarm a super? If given too soon is there any danger of the queen entering it? How much comb honey can I expect from a good swarm hived about June 2, with conditions as given herewith? IOWA.

ANSWERS.—1. In a very poor season there will be no tiering up. In a good season, after the season has fairly advanced, there will be three or four supers on each hive, and from that up to seven or eight. But in the latter case the top and the bottom super will likely be empty or nearly so.

2 Just as soon as the second super is about half filled, with continuing prospects such as you describe I should add a third super at the bottom, and also one on top. Like enough the bees may not enter the upper one, but it serves as a safety valve, and it will be in good shape to put down when the next one is needed below.

3. The unfinished sections from different hives are assembled into one super, and then this super is put back, possibly on a hive from which none of the unfinished ones were taken, no attention being given to

where the sections came from.

4. Unless excluders are used (and I would not use excluders with sections) a super should not be given for about two days, or until the queen has made a start at laying in the brood-chamber. A swarm hived June 2 may store anywhere from 50 to 150 sections or more, depending upon circumstances, especially the season.

Diseased Bees

1. My bees have some disease resembling European foulbrood, but lacking any offensive odor. The new swarms are affected as well as the old colonies, although they are hived on full sheets of foundation—dequeening seems to have no beneficial effect. Would uniting and Italianizing be of any benefit or is it too late in the season? (We generally have a good fall run) The larvæ dies at all stages, from the freshly-hatched egg to the full sized grub before it is capped over.

2. I also have trouble in rearing queens. If I give them a ripe queen-cell they allow her to hatch, but in two or three days she disappears, or if I give them a breeding comb from my best queen they will start cells but destroy them before she hatches.

MICHIGAN.

ANSWERS.—1. Your first step is to send a sample of the diseased brood to Dr. E. F. Phillips, Department of Agriculture, Washington, D. C. It will cost you nothing to have him decide what the trouble is, and if you write in advance he will send you a box in which to send the sample, with a frank, so that you will not even have to pay postage. You can also ask him for literature telling what to do. If the disease is European foulbrood, and if the colonies are of dark stock and rather weak, then uniting and giving Italian queens would likely be of much service. As already said, the important thing is to send sample to Dr. Phillips.

2. It is only too common a thing for young queens to disappear after they are several days old, perhaps being lost on the wedding trip, and this year, with so much cool and wet weather there has been more than the usual trouble. Without more particulars it is not possible to suggest what you should do to remedy the trouble; indeed, it is not certain that I could tell you what to do if I had fullest particulars, for I have troubles of my own in that way.

If queenless bees kill cells that they have started, they are doing something abnormal, and something quite exceptional. Sometimes it happens that they have something in the way of a queen, which, although it may be of no value, and may not lay, is held in such esteem by the workers that they will suffer nothing else to take its place.

You see I'm not helping you out very much, and it is a good deal like saying to you, "Better luck next time."

Pollen in Sections

Will you kindly advise what to do with extracting combs that are filled with pollen? Many of mine are so clogged with pollen that I will be compelled to melt them unless there is some way of getting it out.

WISCONSIN.

ANSWER.—I'm just a bit suspicious that the trouble is not so bad as you suppose, and that if you leave the pollen where it is it will be used up by the bees next year, always supposing it is kept in good condition over winter. It often happens that such pollen is worth more than its weight of honey early in the season. If, however, you want to get the pollen out of the comb some other way than to have the bees eat it out, I'm not sure that I know of any good way. I have known pollen to dry up in the combs so it would shake out.

REPORTS AND EXPERIENCES

Poor Season

We have here a very bad honey season in this province. I have reared and exported some queen-bees; but as you can conceive my work is very much under one-fifth of that of last year. E. PENNA,

Bologna, Italy

Short Crop

Rather a short honey crop here. I have about two tons from 115 colonies, spring count. O. B. GRIFFIN.

Caribou, Maine, Aug. 15.

Too Much Rain

Too much rain since July 1 for honey; about one-third of a crop, but bees are strong and hives well filled with honey. If the weather is favorable we ought to get goldenrod honey. EDGAR RICARD.

Canaan, N. H., Aug. 10.

Poor Season

The present season is a total failure, owing to constant rains during our main honey flow, which is in May and June in this locality. The seasons of 1913 and 1914 have checked the growth of white clover, so that there is little in bloom this season.

Success in beekeeping here is dependent from wild flowers chiefly, and if they fail there is no surplus honey to be expected. We find that sweet clover is an excellent bee plant, but it is hard to establish in this locality because our soils are mostly what may be called *lime hungry*. Some farmers here are starting to grow this plant by the way of experiment. To make it grow on some poor and worn out soils, lime or ashes from burned wood must be mixed into the soil. This insures a growth. Should this plant ever be well established here, it would surely be a blessing to the farmer as well as to the beekeeper. SUBSCRIBER.

Honey by Parcel Post

I noticed on page 316 of the September American Bee Journal, that Dr. Miller says candied honey can go by parcel post. Why didn't he go a little further and say that liquid honey can go, too?

I am sending liquid honey by parcel post nearly every day. I put it in 5 and 10 pound friction-top pails and then crate (not box) the pails with wood and it goes all right.

I boxed a few pails at first, but soon found that the packages had to be so the postmaster could examine them, and the crates work just as well as the boxes.

Parksville, N. Y., Sept. 15. A. W. SMITH.

Large Increase

I have kept bees for several years, and have made a success of the business so far. My worst trouble has been their tendency to rob during a time of scarcity, but I have less robbing lately because I keep my colonies strong. That is the best preventive any one can use.

The first of August, early in the morning, I noticed the bees were very cross. They were robbing several colonies, and I soon found the colony which was doing the robbing. I painted the entrance of this colony with carbolic acid, and in about two hours used the carbolic acid again. By midday everything was quiet as usual and has been ever since.

We had a very cold, backward spring this year, and bees were very slow building up. Our honey flow began the last of April with the colonies still weak. I was taken sick about that time and was confined to my room about two months. My father took care of the bees, but he didn't know anything about them, so I had to guess at what was going on and tell him what to do. I had him piling on supers, hoping that would keep them from swarming until I could attend to them myself, but they began swarming the last of May, and every colony in my apiary swarmed before I got well. The supers were piled three and four high, and not a pound of finished honey, but the sourwood flow has been good and I have all of my supers finished and capped.

In the wind up I have a hundred colonies of increase and an average of 96 sections of nice marketable honey, which is not so very bad after all. FRANCIS W. GRAVELY.

Stockton, Va.

Early Frost

The honey harvest has been very unsatisfactory this year. It was rainy and cold through May, June, July and August. We had a hard freeze Aug. 30, but Sept. 1, the bees seemed to find something on the late willow herb, and are doing quite well now.

P. A. SPELLMAN.

Armstrong Creek, Wis.

Good Crop

This has been a good year for bees. My 14 colonies stored over 1200 pounds of extracted clover honey. I did not run for increase. It has been a cold and wet season with plenty of rain. LOUIS A. SCHAFER.

Fowler, Mich., Aug. 16.

Good Prospects in New Zealand

We had a very mild winter throughout New Zealand. Some of my hives had three frames of brood in July, our mid-winter. At present they are getting all kinds of pollen from dandelions and pine trees.

Eltham, New Zealand. T. J. MANNEX.

The Season in Eastern Canada

The conditions of bee culture in Quebec and the maritime provinces are unfavorable and we will end the season of 1915 with less numerous apiaries than in 1914, and a very light crop of honey.

In my apiary of Millaflora, which may be taken as an average, we cannot count 1915 among the good seasons. It is the first season in 15 or 20 in which the number of colonies has decreased.

Of the 205 colonies which I put in the cellar Nov. 9 last and brought out April 20 (two weeks earlier than common), we had lost 50 by June 20, two months after their removal from confinement. On July 7, we united four weak colonies. Never before did we find it necessary to unite weak colonies after June 15. But the season was so bad that we did not wish to keep colonies covering only three or four combs at that date.

We have had 40 swarms, and our present total is 181 colonies, which will be probably reduced to 160 to 170 by the time of placing them in winter quarters. The total crop has been 850 pounds, or less than 5 pounds per colony.

The clover suffered considerably from drouth in 1914. Then the reduced amount of winter snow and its disappearance in the first week of April left the fields exposed to spring frosts.

However, we so often have good crops of honey that we are not discouraged. The crop in the West is better than in the East. But when the clover crop fails here, the season is a failure for we have neither buckwheat nor fall flowers on which to rely.

JACQUES VERRET.

Charlesbourg, Quebec, July 30.

Excessive Swarming

We have had a fair season, but were troubled with excessive swarming. Our first swarm came April 30, and the last one to date, on Sept. 7. Cool, cloudy wet weather made the harvest slow, but prolonged the season and today, Sept. 16, the bees are working on some late white clover. Our principal fall flow has been from the smartweed, and from this the bees have filled their hives for winter and returned a considerable surplus. I had 13 colonies, spring count. They increased to 26. They gave us a little more than 2000 sections of comb honey and about 400 pounds of extracted.

Frank Bechly.

Montezuma, Iowa, Sept. 16.

Fair Season

My crop this year was a little better than last year and averaged about 35 pounds of comb honey to the colony and 65 pounds of extracted.

Swarming was worse this year than I have ever seen it. Blossoms of white clover and basswood were thicker than I have ever seen, and if the weather had not been so cold, wet and cloudy we would have had a larger crop than ever before in this State.

Wisconsin, Aug. 24. Subscriber.

Good Crop

My bees did better this season than they have ever done before, although it has been very wet. They are still working when it is not raining. I have 27 colonies. They have gathered 100 pounds per colony, spring count of 20. This is good for this locality, as it has never been a good bee country. I am trying to dispose of my honey around home.

Gridley, Kan., Sept. 16. F. O. Clay.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

Phelps' Golden Italian Queens will please you.

Bees and Queens from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

Golden all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

Phelps' Golden Italian Bees are hustlers.

Queens from the Penn Co. See our large ad. elsewhere in this Journal.

100 fine Italian queens after Sept. 1, 50 cts. each. Tested, 75 cts. P. B. Ramer,
Harmony, Minn.

Vigorous prolific Italian queens, $1.00 each; 6 for $5.00. A. V. Small,
2302 Agency Road, St. Joseph, Mo.

Golden all-over Queens of Quality. Untested, 75c; tested, $1.50.
A. O. Heinzel, Rt. 3, Lincoln, Ill.

For Sale—40 colonies bees in 10-frame hives; mostly Carniolans heavy with stores.
N. S. Burrier, Sellman, Md.

Bee-Keeper, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

Place your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens. John W. Pharr,
Berclair, Tex.

For Sale—75 colonies of bees in 8 and 10 frame Standard Dovetailed L. hives. A No. 1 condition. J. F. Turpin, Carrollton, Mo.

Quirin's superior improved queens and bees are northern bred, and are hardy. Orders booked now. Over 20 years a breeder. Free circular. H. G. Quirin, Bellevue, Ohio.

I can supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed.
I. N. Bankston, Buffalo, Tex.

For Sale—About 200 colonies in 10-frame hives; extractor and other necessaries; in good climate and fair location. Write or come and see. M. B. Bailey, Agt.
Christine, Tex.

Pure Italian Queens—Guaranteed; by return mail. One, $1.00; 6, $4.25; 12, $8.00; 50, $32; 100, $60. Also bees by the pound, nuclei and full colonies. Please send for free circular. J. E. Wing,
155 Schiele Ave., San Jose, Calif.

Golden Queens that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

Italian Queens, also the Golden Beauties and Carniolans. Tested, $1.00. Untested, 75c each. For bees by the pound and queens in lots write for prices. Page Bankston,
Buffalo, Tex.

Queens by return mail, 80c each, in quantity to suit to close out season's supply. For description, see page 320 of Sept. A. B. J. Better requeen now.
Chas. M. Darrow, Star Route, Milo, Mo.

The Secret of Success is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and $1.00 for tested. G. W. Moon,
1904 Adams St., Little Rock, Ark.

For Sale—500 colonies of Moore stock of bees in single story 10-frame Langstroth hives, in excellent condition for winter. The bees are at the coast, and no black or foulbrood among them.
M. H. Mendleson, Ventura, Calif.

Queens, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

Golden and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

Notice—R. A. Shults will sell Italian queens in the season of 1015. Untested, $1.00. After June 1, 75c; tested, $1.50; select tested, $2.00. Breeders, $5.00. Bred from Moore and Doolittle stock. R. A. Shults.
R. F. D. 3, Cosby, Tenn.

Queens from my honey-gathering stock, 3 and 5 band Italians. Bred in separate yards. Queens the rest of the season—one, 75c; six, $4.00; 12, $7.00; 25, $13. Safe arrival and satisfaction guarannteed.
D. E. Brothers, Attalla, Ala.

For Sale—Improved leather-colored Italian queens, very hardy and bred for business. Select untested, $1.00. Also Golden, Carniolan, and very gentle and hardy Caucasian queens at same price. Virgins, 50c each, or five for $2.00. F. L. Barber,
Lowville, N. Y.

Phelps' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

For Sale—250 colonies high grade Italian bees in 10 frame modern white pine hives. Equipped for extract and comb honey. Located in southwestern Oklahoma. Fine climate and extensive and virgin alfalfa pasture. Fine opportunity. Must sell quickly because of other business changes.
A. W. F. Lee, Cordell, Okla.

Superb Golden and 3 banded queens at $1,00 for one; $7.50 for 12; $32 for 50; $60 per 100. Bees in pound packages in season.
Frank A. Leib, R. F. D. 7, San Jose, Calif.

Leather-Colored Italian Queens, 70c, untest; 95c, test; 1-frame brood nucleus, $1.25; 2-frame, $1.90, 1-lb. bees, $1.00; 2-lbs, $1.75. Free from disease.
C. H. Cobb, Belleville, Ark.

For Sale—Between 60 and 70 colonies of Italian bees on Hoffman frames in good condition and good location, in sunny southern Florida; a house 10x20 feet built in sections, household goods chickens, etc., at reasonable price. Bees make honey in winter. Reason for selling, too old.
Address, P. O. Box 217, Fort Lauderdale, Fla.

HONEY AND BEESWAX

Wanted—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

For Sale—Fine quality raspberry, milkweed honey in new 60 lb. cans (2 in case). Write for sample and price.
P. W. Sowinski, Bellaire, Mich.

For Sale—White extracted honey, 7c; amber, 6c; two 60-pound cans to case. Well ripened and mild flavored.
H. G. Quirin, Bellevue, Ohio.

We are looking for a good party to ship us A No. 1 honey. Please state prices in light and dark. Address, Emil Strudle.
1393 12th St., Milwaukee, Wis.

For Sale—Fancy extracted honey, sweet clover, at 7c by the case. Also 5 lb. F. T. buckets at $5.00 per case of 60-lbs. Send cash. Virgil Weaver, Falmouth, Ky.

For Sale—Raspberry, Basswood, No. 1 white comb, $3.00 per case; fancy, 3.25; 24 Danz. sections to case; 6 to 9 cases to carrier. W. A. Latshaw Co., Clarion, Mich.

For Sale—Light amber extracted honey, 7½ cts.; fine white honey, 8½ cts.; 120-lb. lots. Sample, 10c. Price comb honey on request. I. J. Stringham, 105 Park Place, New York.

For Sale—Spanish needle, heartsease, No 1 light comb, $3.00 per case; fancy, $2.35; 24 Danz. sec. to case, 6 to 9 cases to carrier. Extracted 120-lb. cases, 9c per pound.
W. A. Latshaw Co., Carlisle, Ind.

For Sale—Light extracted honey, clover and basswood blend, in any style packages. Write for prices. Sample, 10 cents, which may apply on order. M. C. Silsbee,
R. F. D. 3, Cohocton, N. Y.

For Sale—Water-white alfalfa, white clover, amber alfalfa, and amber fall honey in 60-lb. cans or smaller packages. Amber fall honey is of our own extracting, and can also be furnished in barrels. Write for sample of kind desired and state quantity you can use. Dadant & Sons, Hamilton, Ill.

You Make a mistake in not subscribing for the Beekeepers' Review, Northstar, Mich., for they are buying supplies of all sorts for the subscriber at cost. One subscriber saved $30 on a single order; many have saved from ten to twenty dollars during a season. Fifteen months for a dollar, beginning with the October number. Do it today.

HONEY LABELS

Labels & Honey Advertisers. Catalog free. Liberty Pub. Co. Sta. D. Box 4H, Cleveland, O.

FOR SALE

Wanted to hear from the owner of good farm for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

For Sale—A small beekeeper's outfit, bees and all. Price low. Write.
Chas. A. Barta, Smithville, Tex.

THE BEEKEEPERS' REVIEW buys your supplies for you at greatly reduced prices from list, sells your honey for you without cost, also what surplus bees you have are readily sold by listing them in our free-to-subscriber list. If you want to buy honey, there is a list of producers who can furnish you with the different kinds direct. Write direct to the one nearest you that has the kind you may be in need of. Those are some of the advantages of subscribing for the Beekeepers' Review, Northstar, Mich.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside, Wash.

FOR SALE—Friction-top pails, 5-lb. size per 100, $4 50; 10-lb. size, $6 25 per 100; 60-lb. cans, two in a case, 10 cases or more, 60c; 25 cases, 59c; 50 cases or more, 58c per case. All f. o. b. Chicago. A. G. Woodman Co.,
Grand Rapids, Mich.

STANDARD DOVETAILED HIVES shipped direct from factory in Iowa. Five 8 frame for $6.00. Hoffman frames, $2.75 per hundred. Plain sections, $4.20 per M. Write for prices on what you need—a full line. Queens, 50c each. Write for large lots in July, August.
The Stover Apiaries, Mayhew, Miss.

THE BEEKEEPERS' REVIEW' 15 months for a dollar, beginning with the October number. Foreign postage, 24 cts. additional Address, with remittance, the Beekeepets' Review, Northstar, Mich.

FOR SALE—Fifteen 11-frame hives, taking L. frames; 11 have telescope covers, 3 have bottom-boards no covers, 1 no cover or bottom. All good, strong, well made hives. Fifteen shallow extracting supers, and 15 one quart Hill feeders go with the hives. $10 buys the lot. Edwin Bevins, Leon, Iowa.

UNHEARD of prices on friction top pails in reshipping cases. Here is a sample of the Review prices; 2-lb cans, 24 in a reshipping case, at 50 cts. per case; 2½-lb. can, 24 in a reshipping case at 50 cts. per case; 5-lb. pails, 12 in a reshipping case, at 55 cts., 10 lb. pails, 6 in a reshipping case, at 45 cts. per case. Liberal rebate made on orders of 25 cases or more. Enclose a dollar for 15 months' subscription of the Beekeepers' Review, Northstar, Mich., with your first order.

FOR SALE—Relinquishment to 80 acre homestead with all improvements, and 100 stands of bees; all strong and vigorous colonies. An ideal location for beekeepers, being in one of the best alfalfa-producing sections of Montana. Sweet clover in abundance. No crop failures. Close to school and direct on mail route. Price, $1200.
William Schulze, Belfry, Carbon Co., Mont.

THE BEEKEEPERS' REVIEW is having made what is without doubt the best parcel-post package on the market. Listen: Double corrugated-paper case that needs only a string around it for mailing Notice those prices: 100 one-gallon tin cans and cases at at only $11; 100 half gallon at only $8.00; 100 quarter gallon at only $6.00. The can is the regular screw-cap syrup can you are all familiar with. Compare these prices with others on the market, and send a dollar for 15 months' subscription to the Beekeepers' Review, Northstar, Mich.

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Editor—C. P. Dadant.
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[Signed] M. G. DADANT, *Manager*.

Sworn to and subscribed before me this 21st day of September, 1915.

[SEAL.] R. R. WALLACE.
Notary Public.
My Commission expires Sept. 21, 1917

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The Booster Will Be a Hummer

It will be chockfull of original poems, special appeals, "Pioneer" bills of fare, and other good things, all dedicated to you to copy in your local newspapers.

This matter will be eagerly accepted by them, and will create great interest in our coming "Honey Day."

This is the greatest number yet. It will make everybody "sit up and take notice," for a fact.

The price of the BOOSTER now, for propaganda purposes is 25 cents for a whole year. Clubbing rates with either of the other journals is $1.00 the year.

Later the price of the BOOSTER alone will be advanced to $1.00. Address,

THE BOOSTER, Redkey, Indiana

REPRINT OF OLD 1853 EDITION OF

Langstroth on the Hive and Honey-Bee

This book is very interesting when read in connection with the Revised Langstroth. Many are surprised at the number of devices mentioned by Langstroth years ago, which are re-written as new today. We offer the old reprint at a special postpaid price of $1.00.

Reprint of Langstroth, $1.00 } Both postpaid **$1.85**
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American Bee Journal, $1.00 }

All three above for $2.50

American Bee Journal, Hamilton, Illinois.

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—OF—

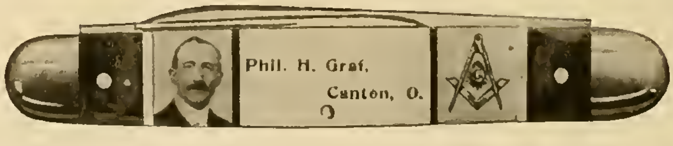
BEE BOOKS, VEILS AND SMOKERS

I have some of the following that I would like to close out at once, and on which I make *reduced prices, all postpaid:*

"Langstroth on the Honey-Bee" (Latest edition, $1.20)	$1.00
"Songs of Beedom" (10 bee-songs—25c)	.15
"Honey-Money Stories" (25c)	.15
Hand's "Beekeeping by 20th Century Methods" (50c)	.30
Wilder's "Southern Bee-Culture" (50c)	.35
Danzenbaker Bee-Smoker ($1.00)	.80

GEORGE W. YORK, SANDPOINT, IDAHO

BEE-KEEPER'S NOVELTY POCKET-KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

NOW IS THE TIME TO REQUEEN

Now is the time to get ready for next year. If you are just taking off a big crop of honey, your queens will be more or less worn out by their enormous egg production, and will profit by being replaced in many instances.

Possibly you look for a big crop next year. Now is is the time, then, to weed out your poor stock, your black stock, or your older queens. You should have young and vigorous queens to start the season next year.

Under any circumstances, weed out your poor stock.

We are in a position to furnish pure stock, either leather colored, three-band, or golden, as you prefer, in very short order and at reasonable prices, and guartee safe arrival and pure stock.

Our prices for the balance of the season are as follows:

Pure Italian Stock

1	Untested	$ 1.00
6	"	4.50
12	"	8.50
25	"	16.50

Tested queens, $1.50 each.

Prices on larger lots on application.

AMERICAN BEE JOURNAL

Hamilton, Illinois

TENNESSEE-BRED QUEENS

43 Years' Experience in Queen Rearing—Breed 3-Band Italians Only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested........	$1.50	$7.50	$13.50	$1.25	$ 6.50	$11 50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ .75
Select Untested	2.00	8.50	15.00	1.50	7 50	13 50	1.25	6.50	12.00	1.00	5.00	9.00
Tested...........	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9 00	17.00	1.50	8 00	15.00
Select Tested..	3.00	16 50	30.00	2.75	15.00	27.00	2 50	13.50	25.00	2.00	10.00	18.00

Bees by the pound, 1 lb., $1 25; 2 lb., $2.25; 3 lb., $2.75.
Nuclei (no queen) 1 fr. $1.50; 2 fr., $2.15; 3 fr. $2.75; 4 fr., $3.50; pure 3-band Italians.
Select queen wanted, add price.

Capacity of yard, 5000 queens a year—Select queen tested for breeding, $5.00
The very best queen tested for breeding, $10

Queens for export will be carefully packed in long distance cages, but safe delivery is not guaranteed.

JOHN M. DAVIS, SPRING HILL, TENN.

Books for Beekeepers

Address the

AMERICAN BEE JOURNAL
HAMILTON, ILLINOIS

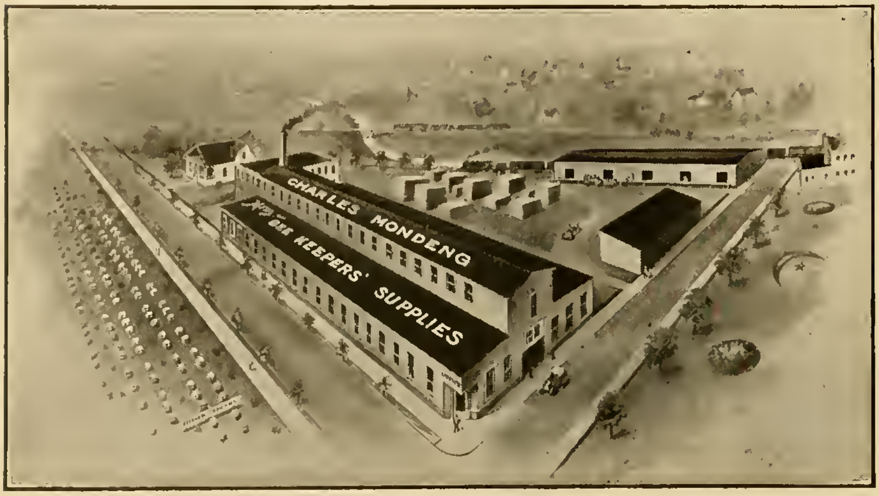
Pearce Method of Beekeeping.—This is an illustrated booklet explaining the keeping of bees in house attics or lofts, whereby any one, either in city or country, is enabled with only a small expenditure of labor to get a lot of honey without coming in contact with the bees. The methods are all fully explained. Price, 50 cents; or with the American Bee Journal one year, both for $1.25.

Advanced Bee Culture,—A new edition of this book by the late W. Z. Hutchinson, of Michigan, is a practical and up-to-date bee book for the specialist beekeeper. Its 200 pages touch on subjects pertaining to modern beekeeping, and all are discussed with the authority of an expert. The book has many beautiful illustrations. It is cloth bound, with a cover design in natural colors on its cover. Price, postpaid, $1 00; or with the American Bee Journal one year, both for $1.75

A Year's Work in an Out-Apiary. This is a booklet by G M. Doolittle, the well known honey producer of New York State. He tells how he secured an average of 114½ pounds of honey per colony in a poor season It is fully illustrated, and tells in detail just how Mr. Doolittle has won his great success as a honey producer. Price, postpaid, 50 cents; or with the American Bee Journal one year, both for $1 25. Every beekeeper should have a copy of this booklet and study it thoroughly.

Langstroth on the Honey Bee—(Revised by Dadant The classic in bee culture. A 575 page cloth bound bee book brought up-to-date. It is an authority, and is used as a text book in many schools and colleges. Finely illustrated and well indexed. It is a book which should be in the hands of every beekeeper, large or small. Chapters are devoted to all important bee subjects from bee-anatomy to diseases and honey production and marketing. Price, postpaid, $1 25, or with American Bee Journal one year, both only $1.75. French edition of this book, price, postpaid, $1.50. Spanish edition, postpaid, $1.85.

Scientific Queen Rearing.—This is practically the only complete book on queen rearing now in print It is looked upon by many as the foundation of modern methods of rearing queens in a wholesale way. G. M. Doolittle, its author, has an entertaining way of writing on bee subjects which helps his readers to follow him with pleasure even if they never intend to rear queens at all. He describes just how the best queen can be reared in nature's way. Cloth bound, 124 pages, 75 cents, postpaid. There is also a leatherette-bound edition of the same book which retails at 50 cents, or with the American Bee Journal, both for $1.00.



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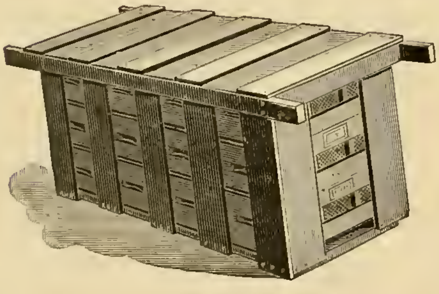
Fine Sections

Thousands of Hives, the best ever made of white pine lumber, ready for prompt shipment. Don't miss them. My goods are guaranteed. A trial order will prove it. 200 colonies of Adels and Carniolans. If you want a square deal, send for my Catalog and Price List. I will pay highest market price for Beeswax in trade.

CHARLES MONDENG
146 Newton Ave. North
Minneapolis, Minnesota

ATTRACTIVE HONEY PACKAGES



Comb-honey Carrier

Manner of Packing Glass Jars

Will enhance the value of your honey and assure you a ready market and the highest possible prices.

Our "Safety" shipping cases will insure safe arrival of your comb honey and thus enable you to reap the benefits of your labor. Cheap and poorly made shipping cases are, indeed, a "penny wise and a pound foolish" policy. We also carry a large assortment of tin and glass honey packages for extracted honey. Our printing department is prepared to furnish neat and attractive looking cartons for comb honey and honey labels at reasonable prices. Ask for our honey label catalog with samples and prices.

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Such as Winter Cases, Hives, Sections, Covers, Bottoms, Bodies, Supers, Brood-frames of every description. Shipping-cases, Section-holders, Comb-foundation, Smokers, etc.

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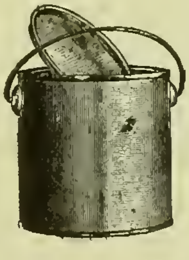

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GET THE BEST

Twenty years selection and breeding brings Murry's Queens above the average Untested, 75c; 6, $4 00; 12, $7.50. Tested, one, $1.00; 6, $5 00; 12, $10. Select tested, one, $1.50; 6, $8.00; 12, $15.

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PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.
Untested queens, $1.00; 6, $5.00; 12, $9.00
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Safe arrival and satisfaction guaranteed. Circular free. I am now filling orders by return mail.

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Sections, Comb Foundation
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Make Hay While the Sun is Shining

Gather your honey crop while there is a chance. If you are in need of supers, sections, comb foundation, frames, etc., write or wire us, and we will send your order out the same day.

We carry a large stock, and can fill any and all orders at once and without delay **Root's Goods** are synonymous with perfect workmanship, the best of raw materials, and **Weber Service** means attention to details and prompt shipments. Save freight. Order from us.

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Cappings or slumgum is a "mussy" job at best. We are equipped for this work, and will render yours for you on shares. Send for our terms. For your share of the wax we will either pay you cash, ship you goods in exchange or manufacture it into

Dadant's Foundation

Known and liked the world over because it is just like the combs the bees make themselves.

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We carry a large stock of all kinds of bee supplies. Drop us a card, making known your wants. We guarantee satisfaction in every way.

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AMERICAN BEE JOURNAL

NOVEMBER, 1915

Mass Agr. College Lib.
Amherst, Mass.
Apr-20

Summer's Last Stand in Frank C. Pellett's Wild Garden, Atlantic, Iowa

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
OLDEST BEE PAPER IN AMERICA

PUBLISHED MONTHLY BY
American Bee Journal
1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

THE SUBSCRIPTION PRICE of this Journal is $1.00 a year, in the United States of America and Mexico; in Canada, $1.10; and in all other countries in the Postal Union, 25 cents a year extra for postage. Sample copy free.

THE WRAPPER-LABEL DATE indicates the end of the month to which your subscription is paid. For instance, "dec15" on your label shows that it is paid to the end of December, 1915.

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Send Sample and State Quantity

How packed and the lowest price you will take

We are always in the market for **Beeswax**, and pay highest market prices.

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A distinctive strain of honey gatherers, with fixed characteristics, the result of 25 years careful breeding.

Untested queens	$ 1.00
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BEE SMOKER
Patented

Bingham Bee Smokers and Uncapping Knives

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Smoke Engine or Doctor in copper 50c extra			
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Steam Heated 3 feet tubing		36 oz.	2.50

Friction-top pails, 5 lb., size per 100, $4.50; 10-lb. size per 100, $6.25; 60-lb cans two in a case, 10-case lots, 60c; 25-case lots, 59c; 50-case lots, 58c per case, f. o. b. Chicago. State quantity wanted and get our shipping case prices.

Woodman's double-wall Protection Hives, single-wall hives, Good enough Brand Sections, shipping cases, foundation, and all supplies Send us a list of the goods wanted and let us figure on your 1916 requirements.

A. G. WOODMAN CO., Grand Rapids, Mich.

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To buy both Comb and Extracted honey. Write us what you have to offer, naming your best prices delivered Every time an interesting price is named us, we buy and remit the day shipment arrives.

SHIP US YOUR OLD COMB

We render it into wax, and pay the market prices.

THE FRED W. MUTH COMPANY
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QUEENS—Golden and Leather-colored

We are in position to fill your orders for queens and bees from date of this "Journal" until October 1, 1915, at following prices:

Prices of one and over	1	6	12
Virgins	$ .50	$2 75	$ 5 00
Untested	.85	4.50	8.00
Select untested	1,00	5.00	9.00
Warranted	1 10	5.50	9.50
Tested	1 50	7 50	13.50
Select tested	1.75	9.00	15.00
Tested breeding	3.00		
Select tested breeding	5.00		
Ex. select test. breeding	7.50		

1 frame nuclei without queen	$1.50
2 frame nuclei without queen	2 75
3 frame nuclei without queen	3.50
Colony 8-frame hive without queen	7.50
Colony 10-frame Danz, without queen	9.50
Colony 10-frame hive without queen	9.50

When queens are wanted with nuclei and colonies, add queens at prices as above for queens.

Bees by Pound F. O. B. Penn., Miss.

½-pound package, wire cage	$1.00
1-pound package, wire cage	1 50
2-pound package, wire cage	2 00

No queen supplied at these prices. Make selection and add to above prices.

All bees and queens shipped from our yards at Penn, Miss. We have no disease, nor do we know of any diseased bees in this State. Our queens are bred from highly selected stock of uniformly marked bees; for gentleness and working qualities they are unsurpassed; they are world-beaters as honey-gatherers. We consider these queens the equal of any on the market, and years of favorable reports substantiate this claim. In ordering you have the choice of selecting three-banders or goldens Prompt attention given to all orders and inquiries. Read The A. I. Root Company's endorsement below.

MEDINA, OHIO, February 6, 1914.
THE PENN CO., Penn, Miss.

Gentlemen:—Replying to yours of February 3, we would state that we have bought a large number of queens of you, We have found them uniformly marked, and of a good stock; in fact, they are first-class in every respect. Another thing, we have always found that you make prompt deliveries, or give us notice promptly when such deliveries could not be made.

THE A. I. ROOT COMPANY,
Per E. R. Root, Vice-president.

Our record last year, about 10,000 queens, and shipments to all important foreign countries; every State in United States and Canada, and only two complaints, which we readily made good Try us. We are sure to please you.
Our QUEENS all around the world. The sun never sets on a Penn Co.'s queen.

THE PENN COMPANY, Penn, Lowndes County, Mississippi

Representatives of The A. I. Root Company, and Queen Specialists.

A NEW BEE BOOK

Entitled, "BEEKEEPING" by

DR. E. F. PHILLIPS, In Charge of Bee Investigations at the Department at Washington, D. C.

This book of nearly 500 pages, with many illustrations, is unique in that it aims to get at the underlying causes of most of the perplexing subjects in Beekeeping. Special chapters on Wintering, Swarm Control, and Bee Diseases are especially interesting.

A scientific authority, yet, Dr. Phillips discusses these subjects in a way that makes the most interesting reading.

The book, which is attractively cloth bound, sells regularly at $2.00—postage extra.

By special arrangement we can offer it, postpaid, with the American Bee Journal one year for $2.50, or with Langstroth Revised for $2.75. Address,

AMERICAN BEE JOURNAL
Hamilton, Illinois

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Campbell's Scientific Farmer is a high-class magazine devoted exclusively to scientific agriculture. It is the only authority published on dry farming—scientific soil culture. No farmer west of the Missouri river should be without this magazine or Campbell's manual of soil culture which is the agricultural bible of the dry farmer, a guide and a comfort in time of trouble. Subscription price of the Scientific Farmer—$1.00 per year. Send for a sample copy and ask about the manual.

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322 Broadway - Billings, Montana

Help Advertise Honey
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Stickers on all letters, packages, shipments, etc. Printed in bright red, already gummed. ice, postpaid, 500, 20c; 1000, 30c.

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buys a Standard Typewriter your choice. Late Style Visibles Back Spacer, Tabulator. Two-color Ribbon. Every modern operating convenience. My prices lower than other cash prices. Perfect Machines. Fully guaranteed. Ask for Special. Five Days Free Trial Offer. **H. A. SMITH**
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Best Sections, Best Shipping Cases
Best of all Supplies

Best prices you will get for your honey when put up in our sections and shipping cases. "LOTZ" sections and shipping cases have stood the test. Why? Because they are perfect in workmanship, quality and material. Buy LOTZ goods when you want the BEST. Our 1915 catalog ready now. Send your name and get one.

H. S. DUBY & SON, St. Anne, Ill., carry a full line of our goods.

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ALLEN'S FOOT-EASE DOES IT

When your shoes pinch or your corns and bunions ache so that you are tired all over, get Allen's Foot-Ease, the standard remedy for the last 25 years, and shake it into your shoes. It will take the sting out of corns and bunions and give instant relief to tired Aching, Swollen, Tender feet. Sold everywhere, 25 cents. *Don't accept any substitute.*

American Bee Journal

What- going to pass up a 5 percent cash November Discount?

Many beekeepers do not prepare for the unusual honey-flows that come in some sections after they have almost given up hopes of getting any surplus honey, and are, therefore, caught off guard. A few dollars put into supplies at this time of the year will put you in shape to take advantage of the early flows, and as you need more supplies subsequent orders can be placed. The 5 percent discount will almost pay the freight and give a running start over those who neglect to put in their supplies this fall.

The quality of workmanship and material is unsurpassed. Some of your neighboring beekeepers will be glad to show you some of the goods they have purchased of us.

Red Catalog, postpaid - "Simplified Beekeeping," postpaid

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Where the good bee-hives come from

The CANADIAN HORTICULTURIST AND BEEKEEPER

The only bee publication in Canada

It is the official organ of the Ontario Beekeepers' Association, and has incorporated with it the former Canadian Bee Journal.

Beekeeping and Horticulture in its various branches are effectively combined to form a live, attractive, and practical monthly magazine.

Well illustrated and up-to-date. Subscription price postpaid.
Canada, $1.00 a year. United States, $1.25 a year. Foreign, $1.50 a year.
Sample Copy sent free on request.

The Horticultural Publishing Co., Limited, Peterboro, Ont., Can.

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No. 25 screw cap jars, 1-lb., $4.60 gross. Shipping cases, cartons and cans. Amber honey, 7½ cts. a lb. Light amber 8½ cts. a lb. on two 60-lb. can lots. Catalog of supplies free. **I. J. STRINGHAM,**
105 Park Place, N. Y.
APIARIES: Glen Cove, L. I.

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Read what J. I. Parent of Chariton, N. Y., says: "We cut with one of your Combined Machines last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 frames, and a great deal of other work. This winter we have a double amount of hives, etc. to make with this saw. It will do all you say of it." Catalog & price-list free

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$16.00	Gets 32 gallon barrel of Chinquapin honey.
$20.00	Gets same amount either poplar or black tupelo gum honey.
$19.20	Gets carriers of eight 24 lb. cases; fancy, 12½ oz., and better light amber comb honey.
$18.00	Gets same amount and quality, 11 ounce sections.
$16.50	Same amount, 10 ounces, lighter weight, 10c per pound.
$ 5.00	Tested grey Caucasian queens; best stock $1.50 each.

J. J. WILDER, Cordele, Georgia

LEGHORN BREEDERS!

Send in your subscription to **The Leghorn Journal** and keep posted on the progress of the Leghorn industry; as it is devoted exclusively to the different Leghorn fowls. Subscription price 50c per year. Special offer—Send us 10c and the names ot five of your neighbors Interested in Leghorns, and we will send you The Leghorn Journal for three months.

THE LEGHORN JOURNAL
Appomattox, Virginia

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We have them and sell at the old price. Send us a list of what you want or send for catalog of the best and cheapest bee supplies of all kinds.

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PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
542-550 S. DEARBORN ST.
PONTIAC BLDG. CHICAGO.

TEXAS QUEENS

Circular free

Italians, the pure three-banded stock from imported mothers. Carniolans, the pure dark grey stock from Carniola. Queens will be ready to ship early in March. No disease. Prices, 75 cents each. $8.00 per dozen.

Grant Anderson, Riohondo, Texas

American Bee Journal

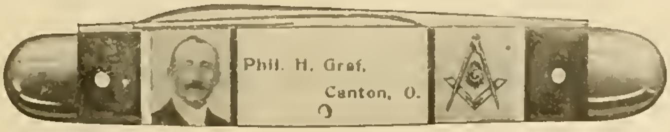
Attractive Prices
ON TIN HONEY CONTAINERS

Just now there is a heavy demand for tin honey containers in Illinois and adjoining territory. A heavy fall honey flow is on. If you need cans or pails write us. We have secured cans at such figures that we can surely save you money.

Write us your ***requirements*** and we will give you our best prices

DADANT & SONS
Hamilton, Illinois

BEE - KEEPER'S NOVELTY POCKET - KNIFE



Your Name and Address will be put on one side of the handle as shown in the cut, and on the other side a picture of a Queen-Bee, a Worker-Bee, and a Drone-Bee. The handle is celluloid, and transparent, through which is seen your name. If you lose this Knife it can be returned to you, or it serves to identify you if you happen to be injured fatally, or rendered unconscious. The cut is the exact size. We have succeeded in getting this knife made in lots from genuine car-van steel. It is especially well tempered and keeps its edge remarkably. When ordering be sure to write exact name and address. Knife delivered within two weeks after we receive order.

Price, postpaid, $1.00; or with a year's subscription to the American Bee Journal—both for $1.80; or given FREE as a premium for sending us 3 New subscriptions at $1.00 each.

American Bee Journal, Hamilton, Illinois.

TENNESSEE-BRED QUEENS

43 Years' Experience in Queen Rearing—Breed 3-Band Italians Only

	Nov 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested........	$1.50	$7.50	$13.50	$1.25	$ 6.50	$11 50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ .75
Select Untested	2.00	8.50	15.00	1.50	7.50	13 50	1.25	6.50	12.00	1.00	5.00	9.00
Tested...........	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9 00	17.00	1.50	8 00	15.00
Select Tested..	3.00	16 50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Bees by the pound, 1 lb., $1 25; 2 lb., $2.25; 3 lb., $2 75.
Nuclei (no queen) 1 fr. $1.50; 2 fr., $2.15; 3 fr. $2.75; 4 fr., $3.50; pure 3-band Italians.
Select queen wanted, add price.

Capacity of yard, 5000 queens a year—Select queen tested for breeding, $5.00
The very best queen tested for breeding, $10

Queens for export will be carefully packed in long distance cages, but safe delivery not guaranteed.

JOHN M. DAVIS, SPRING HILL, TENN.

HONEY AND BEESWAX

DENVER, Oct. 18.—The first of the new crop of comb honey is now coming in and sells locally at the following prices per case of 24 sections: Fancy, $3 60; No. 1, $3.38, and No. 2, $3.15. Crop promises to be light. Local prices on extracted unchanged. White, 8½@8¾c; light amber, 8@8¼c; amber, 7@8c. We pay 25c cash and 27c per pound in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

CINCINNATI, Oct. 2.—The demand for honey is increasing, which is the general rule for this time of the year. Comb honey is selling fast at $3.75 to $4.00 per case for fancy white. Amber comb honey is not wanted in this market at any price. For choice white clover extracted honey we are getting from 7@9c a pound; for amber extracted in barrels from 4@7c, according to the quality and quantity purchased. We are paying 28c a pound delivered here for choice bright yellow beeswax. THE FRED W. MUTH CO.

NEW YORK, Oct. 18.—The new crop of comb honey is rather slow in arriving; still there is not a very heavy demand as yet, probably due to the intense hot weather of late. Prices are ruling at from 15@16c per pound for fancy white; 13@14c per pound for No. 1; 10@12c per pound for off grades. The market on extracted is quiet and inactive; there seems to be an abundant supply of clover and linden as well as California sage and alfalfa. West Indian honey is arriving right along with prices showing a downward tendency.

Beeswax is coming in steadily at from 30@31c per pound.

HILDRETH & SEGELKEN.

LOS ANGELES, Oct. 19.—Strictly water white sage honey is scarce, one car having recently sold at 6c net to the producers. Light amber sage has been sold on a basis of 3½@3¾c; light amber alfalfa, on a basis of 3⅜@3½c. All net to producer, f. o. b. common shipping points. Beeswax is worth about 24@25c. HAMILTON & MENDERSON.

KANSAS CITY MO., Oct. 16.—Our market is well supplied with both comb and extracted honey. We quote as follows: No. 1 white comb honey, 24 section cases, $3.25 to $3.35; No. 2, $2.75 to $3.00. No. 1 amber, 3.00 to $3.25; No. 2, $2.50 to $2.75. White extracted, per pound, 7½@8c. Amber, 5½@7c. Beeswax, No. 1, 28c, No. 2, 25c, per pound.

C. C. CLEMONS PRODUCE COMPANY.

CHICAGO, Oct. 18.—Arrivals of honey are quite free, and stocks are accumulating in the absence of a free outlet. Prices on the best grades of white comb honey are ranging from 16@17c per pound with amber grades at 13@14c per pound. Mixed colors are difficult to class at anywhere from 10@12c per pound. Extracted honey is dull with prices ranging from 7c@9c per pound. Ambers from 5@6c per pound. Beeswax at 28@30c per pound. R. A. BURNETT & CO.

INDIANAPOLIS, Oct. 20.—The demand for honey has been very brisk of late, especially extracted; however, we have been unable to get a supply of comb to meet the demand. At this writing, No. 1 choice white is selling at $3.50 to $4.00 per case. Extracted of best quality in 60-pound cans, in small lots, 9½@11c per pound. We are paying 28c cash for beeswax, 30c in trade. W. S. POUDER.

Statement of Ownership, Management Circulation, Etc.,

of the American Bee Journal, published monthly at Hamilton, Illinois.

Editor—C. P. Dadant.
Managing Editor—M. G. Dadant.
Owner—C. P. Dadant, Hamilton, Ill.

Known bondholders, mortgagees, and other security holders holding one percent or more of total amount of bonds, mortgages or securities—None.

[Signed] M. G. DADANT, *Manager.*

Sworn to and subscribed before me this 21st day of September, 1915.

[SEAL.] R. R. WALLACE.
Notary Public.
My Commission expires Sept. 21, 1917.

MORE MONEY FOR YOUR HONEY
WHEN PACKED IN
LEWIS SUPERB SHIPPING CASES

After you have harvested a nice lot of comb honey do not make a serious mistake by putting it up ready for the market in a cheap appearing case such as a home-made one or that turned out by a local planing mill. The best and most economical (taking the sale of the honey into consideration) case must be turned out with the same careful workmanship and with the same selection of proper material as goes into the making of first-class bee hives and honey sections such as we manufacture.

It is an acknowledged fact that comb honey put up in attractive Lewis Shipping Cases will bring from one to two cents per pound more than the same honey put up in poor cases. Do not cheapen your product by inferior cases. You can afford the best—remember your shipping cases are the show windows for your goods. Your honey will bring more money if well displayed.

INSIST ON THE LEWIS MAKE

Lewis Shipping Cases are cut accurately out of clear, sound basswood lumber. All of these cases are neatly packed, and include the proper size nails for nailing them up.

For sale by us and the following Lewis distributers:

CALIFORNIA	W. A. Trickey	Bishop
COLORADO	Colorado Honey Producers' Association	Denver
COLORADO	Grand Junction Fruit Growers' Association	Grand Junction
COLORADO	Delta County Fruit Growers' Association	Delta
COLORADO	Producers' Association	De Beque
COLORADO	A. S. Parson	Rocky Ford
COLORADO	Coffin & Foster	Rifle
COLORADO	J. Roscoe Miller	Montrose
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TEXAS	Southwestern Bee Company	San Antonio
UTAH	Foulger & Sons	Ogden
WASHINGTON	Chas. H. Lilly Co	Seattle
PORTO RICO	Fritze, Lundt & Co. S	Ponce
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G. B. LEWIS COMPANY

Sole Manufacturers

Watertown, - Wisconsin

AMERICAN
BEE JOURNAL

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HAMILTON, ILL., NOVEMBER, 1915

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EDITORIAL COMMENTS

Our Front Cover

On our front cover we give one of Frank C. Pellett's photographs of his wild garden. The young lady in the photograph is Miss Mildred Neff, a younger sister of Mrs. Pellett.

Aster Honey

It is our impression that the main reason why aster honey is bad food for winter is that it is harvested so late that much of it remains unsealed and becomes watery during moist winter weather. Will others take notice of this and give their experience?

A number of beekeepers have given a favorable report on wintering bees with aster honey, in Gleanings in Bee Culture for Aug. 15.

Beekeeping—A New Book

This is the title of a work of 457 pages by Dr. E. F. Phillips, the Apiarist of the Department of Agriculture, who has been in charge at Washington, D. C., for a number of years, and whose studies of bee diseases, queen-rearing and colony wintering have already rendered great service to American apiculture.

This book occupies a special place in the beekeeper's library, for it is neither an arduous scientific work unintelligible to the average man nor a solely practical treatise. Dr. Phillips handles apiarian questions in his own way, says nothing positively of which he cannot furnish proof, but gives his readers some very decided information on the most important subjects. The book is interesting and captivates the attention. Here are a few of our impressions gathered in pencil notes while reading it.

In the opening chapter, "Beekeeping as an Occupation," the author shows that there is at present no likelihood of overproduction of honey. The value of the United States honey crop is about $20,000,000, or about 20 cents worth of honey per inhabitant. On the question of who should keep bees, he suggests that those enthusiasts who love out-of-doors and intimacy with these insects will make a success, and that those who have no liking for the pursuit should never consider it.

His experience on the fertility of queens is in line with that of other practical men. He says that a prolific queen may lay as many as 4500 to 5000 eggs in 24 hours. He very clearly supports the idea of independent personal odor of hives, bees and queens, which has been denied of late by critics, but which is strongly sustained by most experienced apiarists.

In the matter of apiary supplies, Phillips deprecates investment in complicated implements. With our most successful apiary workers he holds that the hives and all supplies should be strongly built, simple in construction, uniform and interchangeable. We certainly commend such advice which is exactly in line with our own practice.

The book contains a very interesting description of the embryonic and larval development of the bee, as also of the structure of the perfect insect. The statement is made that the early flight of the young bee, a week after birth, is necessary to void the feces. This statement strengthens our view that young bees which have never yet left the hive are undesirable as escort for a queen on a protracted journey.

The opposite views of Schiemenz and Schoenfeld on the origin of the pap or royal jelly are mentioned by him without the expression of personal opinion, neither side having as yet made positive proof of the correctness of its statements. Schiemenz, sustained by Cheshire, asserts that the larval food is a product of the salivary glands, while Schoenfeld, sustained by Cowan, gives it as a product of the second stomach or ventriculus, from which the jelly is regurgitated. The fact that Phillips does not take side with either scientist, one of whom must be right, shows that he does not wish to support anything without proof.

Regarding the organs of smell, Phillips sustains the recent studies of McIndoo, in which the assertion is made that these organs are not located in the antennæ but in "olfactory pores" on the bases of the wings, on the legs and on the stings. As we have given a description of the McIndoo studies, pages 197-200, June, 1914, we will add nothing to this subject. But the support of Phillips will strengthen the McIndoo assertion in the minds of many beekeepers.

Dr. Phillips believes in evolution, and in a note at the foot of page 82 criticises the egotistical belief that the honeybee, as well as the rest of the universe, was made solely for the benefit of man. He says:

"Not until one realizes that every species of plant and animal is in a struggle for its own existence, without regard for the welfare of any other species, can one get a correct conception of the facts of Nature. The honeybee was evolved from less specialized insects because the changes fitted it better to its environment; they store honey because the instinct to do so fits them better for their environment. The fact that man can take some of this honey should not cause him to think that all this course of evolution is for his benefit."

In regard to the location of apiaries the author suggests that the selection should be made so that the colonies may store the maximum profitable surplus, and this depends upon location. The number of colonies to be kept in each apiary should depend upon this factor and also upon the number which the apiarist may be able to manipulate in a single day. In connection with this subject, a map of the Dadant apiaries, published in Gleanings in Bee Culture in 1891, is given. A reproduction of our present system of apiaries has been suggested to us in this connection, and will probably be published in the Bee Journal before long.

On this subject of honey extracting, Dr. Phillips mentions the advantage derived from saving the combs, and states that it is estimated that beeswax costs from 6 to 20 pounds of honey for each pound of comb secreted. This has been a much debated subject, some old school apiarists holding that in some cases a pound of comb costs less than two pounds of honey.

On wintering, which is one of the subjects most studied by Phillips, the statement is made that, during cold weather, any disturbance which excites the bees causes brood-rearing, and that this should be avoided as long as there is to be no opportunity for the young bees to take a flight. The Langstroth frame is considered by him as rather shallow for best results out-of-doors. A double story, with ample stores in the upper portion, is recommended. The annual consumption of honey by a colony, for their support, is estimated at 200 to 600 pounds. He quotes Hommel, a French experimenter, as giving an average of 480 pounds for the needs of a colony in a season.

A very full list of the principal honey plants is given. The foulbrood chapter is thorough. Phillips is an authority on this subject, since he has helped Dr. White in studying the disease. The treatment he advises is popularly known as the "shaking treatment," and is recommended by him for both American and European foulbrood, with the additional advice, in the latter disease, to change the queen for a young, vigorous Italian queen. The removal of the old queen and keeping the colony queenless for a few days, is mentioned as often sufficient, in treating European foulbrood.

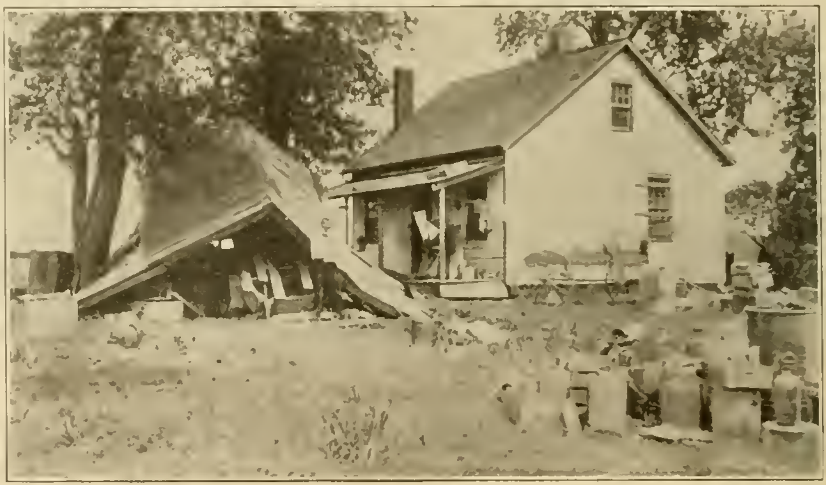


FIG. 1.—AFTER THE FLOOD AT THE LOUIS WERNER APIARY

Several queen-rearing methods are given with insistence upon the necessity of rearing queens from choice stock of pure race, owing to the variability of crosses.

We find only one subject for criticism, and it is a matter of opinion in connection with the Dzierzon theory of parthenogenesis. As the discussion of this subject will require a statement of past experiences, we will give it a special mention in a future number. Some comments by Dr. Miller will also be given.

Impoverished by Flood

One of our well-known Illinois beekeepers, Mr. Louis Werner, has been impoverished by the floods of the past summer. The accompanying engravings show the extent of the loss. Figure 1 represents the home. The water was 6½ feet deep in it on Aug. 21. The torn down building next to it was his summer kitchen. The apiary of 75 colonies was almost entirely destroyed. The honey house shown in Fig. 3 contained 650 pounds of comb honey and 400 pounds of extracted honey. This was lost as well as about 400 pounds still on the hives and 23 nuclei for queen-rearing. The water came so fast, he says, that they had no warning of the danger. The barn, shown in Fig. 2, was moved, as shown, upon the railroad track, and had to be torn down to be removed. The cut shows carpenters in the act of taking off the roof.

Of the entire apiary only four or five hives were saved with a few bees in them. But they were queenless. The traps and implements saved from the flood are shown to the right of the house, in Fig. 1. All his bee-supplies are gone. The 400 pounds of extracted honey was in a tank, and this was tipped over when the honey house was moved by the water 100 feet. The depth of the water is shown on the house by the upper slat nailed across the window.

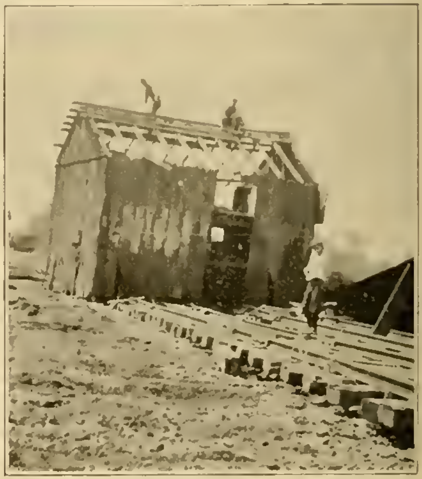


FIG. 2.—LOUIS WERNER'S BARN MOVED UP ON THE RAILROAD TRACK BY THE FLOOD

Mr. Werner is aged and a cripple, and we believe deserves relief at the hands of his brother beekeepers. The American Bee Journal proposes to start it with a subscription of $20. All sums remitted will be acknowledged in these columns. In these times of strife and war, we ought to help the unlucky friends.

The Hamilton-Keokuk Meeting

Press of work prevented us from commenting in the October number upon the discussions that took place at the above-mentioned meeting.

The paper read by Dr. Pammel, State Botanist of Iowa, at Keokuk, will be

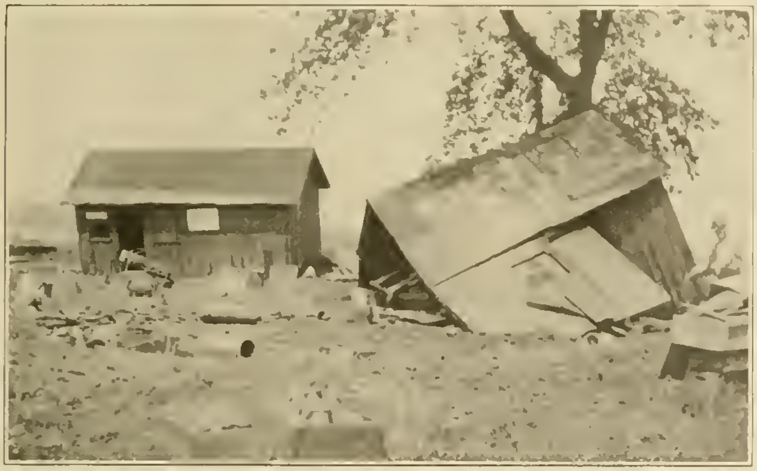


FIG. 3.—ANOTHER VIEW OF THE FLOOD DAMAGE

found in this issue. This paper was supplemented by an interesting demonstration of honey plants. The Misses Mitchell, of Keokuk, had brought to the meeting an armful of flowers, among which the following were named and exhibited:

Bidens aristosa (tickseed, Spanish needles), *Polygonum pennsylvanicum* (smartweed), *P. hydropiper*, *P. persicaria* (lady's thumb, knotweed, heartsease), *P. orientale*, *Solidago* (goldenrod), iron weed (*Veronia*), boneset (*Eupatorium*), mint, asters, catnip, Simpson honey plant (*Scrophularia*), all good honey yielders, and a number of other flowers of indifferent utility or good only for pollen. The entire collection had been gathered from the hills and valleys in the neighborhood of Keokuk.

On the questions of diseases it was the unanimous verdict of the inspectors present that the 30 States, more or less, which now have inspection laws, should unite under the direction of the Department of Agriculture, in order to have uniform and concerted action for the protection of apiaries.

The influence of queens upon European foulbrood was discussed and Mr. France suggested that queen-breeders should make entirely sure of the absence of that disease from their apiaries, and that a clean bill of health should be withheld for a year from queen-rearing apiaries where any disease was found.

More About European Foulbrood

The theory that nurse bees feed to larvæ the juices of other larvæ that are diseased is only a theory. I think it is true, *but I don't know.* I do know, however, that in cases of starvation, or at any time when a larva is mashed, the bees suck the larval juices, and it doesn't seem so very hard to believe they may do the same thing with a diseased larva before the disease has made said juices at all putrid.

I don't know that European foulbrood is not communicated by the queen. I do know that I have caged the queen in a diseased colony something like 10 days, and in the great majority of cases the disease was cured. Surely in such cases the queen did not convey the disease.

Objection is made that cutting out queen-cells will have evil results in the character of the bees. I have followed the practice nigh half a century, and my bees are more vigorous than ever. That doesn't appear as if cutting cells was so very bad.

Twenty-four days queenlessness with certain feeding is given as effecting a cure. But why that if 10 days queenlessness without any feeding will answer?

I believe this: that a mild case of European foulbrood—and I do not believe that a watchful beekeeper need ever let a case go beyond the mild stage—allowing the case to be in a strong colony, will be cured nine times out of ten by the mere caging of the queen for 10 days. C. C. M.

The reader will find three articles on this subject in the present number. Until our scientists can give us some positive explanation of how the disease is carried it is well to let our practicing beekeepers tell how they succeed in overcoming it. The apiary mentioned by M. G. Dadant in the April number as having had 51 colonies suffering from European foulbrood in 1914, had the disease again in 1915, but nevertheless furnished a crop of honey amounting to 11,000 pounds besides an increase by division of 12 colonies on a spring count of 79. C. P. D.

The Scarifying of Sweet Clover Seed

Since it has been discovered that the difficulty of germinating of sweet clover seed, owing to its hard coat, may be overcome by scarification, we have found that a similar trouble exists with the sulla (*Hedysarum coronarium*), so useful as a honey plant in Italy- private letter, Mr. Bertrand, the former editor of "Revue Internationale," tells us that the coating of the seed of sulla is so hard that much of it does not germinate before a year. In view of this, a planter of Algeria tried immersing the seed for five minutes in boiling water and obtained great success. Mr. Bertrand tried the method himself and "practically all the seed germinated within five or six days."

In lieu of the method of scarification, some of our best instructors in the growing of sweet clover advise soaking the seed in sulphuric acid for 20 minutes. As not every farmer has sulphuric acid readily at hand, and as this drug is quite dangerous to handle, those who are unable to secure scarified seed might try the boiling process.

If we were living in superstitious times, it would perhaps be asserted that these plants were originated in Inferno, since their seed withstands boiling.

The process of scarification we are told is in vogue in southern Italy for the seed of sulla. But they call it "decortication."

Price of Honey in Germany

According to the July number of "Die Bienenpflege," a pound glass of honey is readily sold anywhere in Germany for 35 cents.

Cooking Recipes

We must commend Gleanings in Bee Culture for Oct. 1, a special magazine number on the use of honey in cooking. It is unusally interesting and is offered in single copies at 5 cents each, or 30 cents for 10. Our compliments to Editor Root and his brother Huber.

Phillips and Demuth on Wintering

Bulletin No 93 of the Bureau of Entomology, which gave the experiments on the "Temperature of the Cluster in Winter," made by the two officials above named, was published in 1914, and commented upon in our Journal, on page 188 of June of that year. They now follow it up with another bulletin, "Outdoor Wintering of Bees," No. 695 of the Department of Agriculture, to be had from the Department in the usual way.

This is a sequel to the experiments, with conclusions as to the requirements. Plenty of stores, thorough and early packing and the avoiding of disturbances which would arouse the colony to activity are the main requisites. The packing method which leaves the front of the hive exposed for the benefit of the sun's rays in winter is deprecated. Windbreaks of evergreens are suggested as the best.

The bulletin holds that the winter loss which now averages about 10 percent in the United States may be reduced to less than I percent. Practical beekeepers will do well to consult this bulletin. It is the result of a great deal of study and careful experiments which cannot be conducted by the average apiarist.

Death of Henri Fabre

The world-renowned French entomologist, J. H. Fabre, mentioned in the American Bee Journal at several times during the past two years, died at his home in southern France, Monday, Oct. 11, aged over 92 years. He is the author of a 10 volume work entitled "Souvenirs Entomologiques."

A Manual of Bee Husbandry

This is the title of a pamphlet of 72 pages, with numerous illustrations published by Elmer G. Carr, Deputy State Entomologist in Bee Inspection of the State of New Jersey. The book is well printed and contains the State foulbrood law and useful information concerning modern methods of beekeeping.

MISCELLANEOUS NEWS ITEMS

The Ohio Meeting.—The Ohio beekeepers have arranged their next convention on the circuit plan with several of the other States. Dr. Phillips, Mr. Root, and several other strong men will be on the program. The meeting will be held in Akron, Nov. 26 and 27. Besides the regular program, visits will be arranged for the Quaker Oats Factory, Rubber Factories, and the O. C. Barber farm, noted for its fine Guernsey cattle, bees, alfalfa, etc. It contains 3500 acres.

Address all communications to me at Ithaca, N. Y., Dept. of Entomology, Cornell University. E. R. King, *Sec.*

◆

Fair Premiums in Arizona.—The apiary department at the Arizona State Fair this year offered $164 in cash premiums for exhibits of honey and beeswax. Mr. M. E. Shrum was the efficient superintendent in charge of the department.

◆

Bee Courses at Cornell and Berkeley.—Cornell University at Ithaca, N. Y., is this year offering instruction in beekeeping. The course will be given during the second semester of the school year. Mr. E. R. King, of Ohio, secretary of the Ohio Beekeepers' Association, will be in charge.

The University at Berkeley, Calif., also announce a course during the second semester of the school year. Two periods a week will be devoted to lectures and a like amount to laboratory and outside work.

◆

Ontario Beekeepers' Association Convention for 1915.—The annual convention of the Ontario Beekeepers' Association will be held in the York County Council Chambers, 75 Adelaide St., East, Toronto, on Tuesday, Wednesday and Thursday, Nov. 23, 24 and 25.

The Executive Committee have drafted a very attractive program that is sure to prove interesting and instructive.

The principal outside speaker will be Dr. E. F. Phillips, in charge of Bee Culture Investigations, United States Department of Agriculture, Washington, D. C. Dr. Phillips has been investigating wintering conditions of the colony, and at the opening session Tuesday afternoon, will speak on "Temperature and Humidity in the Hive in Winter." In the evening he will give an illustrated lecture, "Some Beekeepers of the United States." Being an extensive traveler and a keen observer, he is sure to have a valuable store of information for this occasion.

On Wednesday morning Mr. H. G. Sibbald, a large honey producer of Ontario, will deal with "Outdoor Wintering," and Mr. Morley Pettit, Provincial Apiarist, will give a summary of the year's work.

The varying seasons of the past three years have introduced new features into bee management. Swarm control and summer protection has been practiced by Mr. F. W. Krouse, and he will relate his experiences. For the beginner, as well as the experienced beekeeper, a discussion on honey production, both comb and extracted, will be interesting.

An exhibit of apiary appliances will be a special feature of the convention. These handy tools and jigs are the inventions of practical beekeepers and greatly assist both for speed and accuracy many of the small operations and manipulations about the apiary. Time will be allotted during the last session on Thursday afternoon for an address on "Modern Apiary Equipment and Buildings," by Mr. Wm. Elliott, of Adelaide, Ont. Mr. L. Caesar, of the Department of Entomology, Ontario Agricultural College, Guelph, will discuss "Poison Sprays and their Relation to Bees."

Programs will be sent to members of the association as soon as final arrangements have been completed.

For further details address the secretary-treasurer, Morley Pettit, O. A. College, Guelph, Ont.

◆

Bee Dysentery.—That the above disease is frequently indirectly caused by insufficient protection of bees during winter is the conclusion reached by Farmers' Bulletin No. 695, issued at

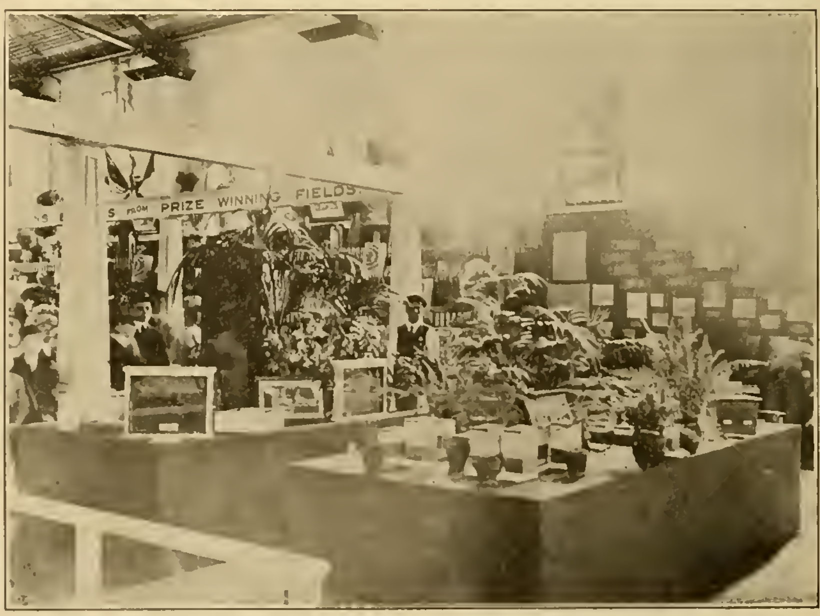


FIG. 1.—VIEW OF APIARIAN EXHIBIT AT CANADIAN NATIONAL EXPOSITION

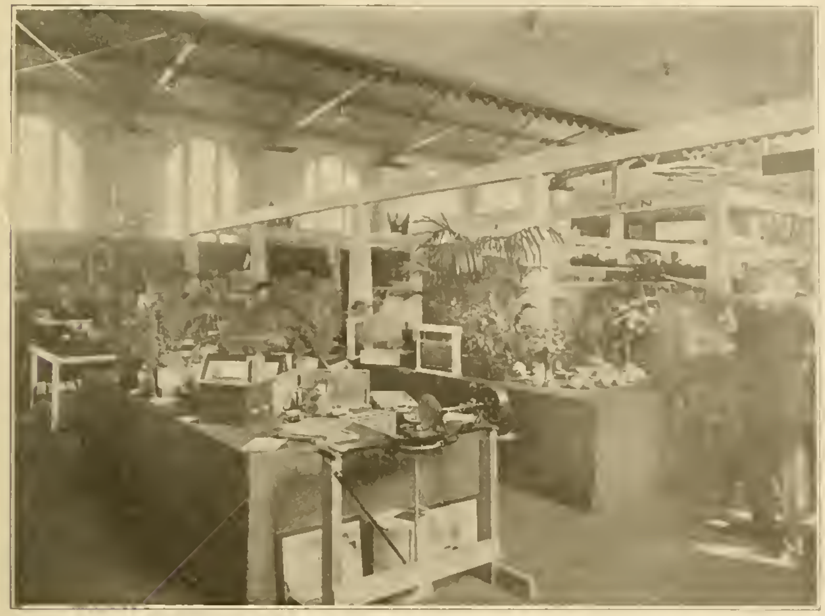


FIG. 2.—ANOTHER VIEW OF THE EXHIBIT AT THE CANADIAN NATIONAL EXPOSITION

Washington, D. C., and distributed free to all who request it.

Adequate insulation and plenty of good stores are given as the two prime factors in successful wintering. "The beekeeper should aim to save his bees rather than his stores, and should provide good food for his colonies as lavishly as insulation for his hives."

The above recommendations are excellent. We advise every one to get a copy of this bulletin.

◆

Bee Meetings Fall in Succession.—According to the pre-arranged schedule announced in our July issue, most of the bee meetings of the middle States have been so arranged that they fall in succession. This will give an opportunity for some of the beekeepers to attend several meetings at a very nominal cost. Following is a list to date of the meetings as they will occur:

1. Ontario, Toronto, Nov. 23, 24, 25.
2. Ohio, Akron, Nov. 26, 27.
3. Illinois, Springfield, Nov. 29, 30.
4. Kansas, Topeka, Dec. 1, 2.
5. Missouri. Dec. 3, 4.
6. Minnesota, University Farm, St. Paul, Dec. 7, 8.
7. Wisconsin, Madison, Dec. 9, 10.
8. Indiana, Indianapolis State House, Dec. 10, 11.
9. Iowa, Des Moines, Dec. 13, 14, 15.
10. Michigan, Grand Rapids, Dec. 15, 16.
11. Chicago - Northwestern, Chicago, Dec. 17, 18.

◆

Illinois Annual Meeting.—The annual meeting of the Illinois State Association will be held at Springfield, Nov. 29 and 30. Owing to the severe illness with typhoid of Secretary Stone, the program has been delayed. However, a good program has been arranged, and as Illinois is on the circuit with the other meetings, several beekeepers of national prominence will attend.

◆

Serious Illness from Bee Stings.—We have recently passed through an experience unlike anything which I have ever seen in all my beekeeping. Wednesday evening Mrs. Pellett was writing and went into the next room in the dark to get some stationary. While she had her hands in the drawer a bee stung her on the neck. We had not been working with the bees during the day and had no idea that they were in the house.

Within a few minutes her lungs began to fill up like one with pneumonia, and in less than half an hour she seemed to be in a very serious condition. She was gasping for breath and her heart was beating so hard that I could plainly hear it. We tried to telephone the doctor, but he was between his office and his home, and we could not reach him immediately. I think I never saw any one sicker than she was for perhaps 30 minutes. After a time she broke out badly, and the action of the heart became less violent. Within an hour she was sitting up again, and although she still felt very badly her condition seemed no longer serious, and she could smile faintly at her experience.

I have had so many stings myself, with no apparent ill effects aside from the slight discomfort, that I had come to think of a beesting as a slight matter. I have heard of serious consequences from stings. In fact, there is a man in Atlantic, whose father died under similar circumstances from a sting in the temple. This experience brought forcibly to mind that under certain circumstances a sting is a very serious thing. Now, after two days, Mrs. Pellett is quite herself again, but I would not go through that half hour again with the very apparent danger for a small fortune. Evidently the sting was very near a vital spot.

I am wondering whether you ever knew of such a case. I am sure I never did, and I hope never to repeat the experience. FRANK C. PELLETT.

Atlantic, Iowa, Oct. 1.

Since the above was written, Mr. Pellett reports that his wife was since stung on the foot without any serious results. It looks as if, in the above

APIARIAN EXHIBIT AT THE KANSAS STATE FAIR, 1915 mentioned case, the poison had reached an artery or a vein, so as to get into the circulation instantaneously. Luckily such instances are rare.

◆

Iowa State Beekeepers' Convention.—The fourth annual convention of the Iowa State Beekeepers' Association will be held at Des Moines, Dec. 13, 14, and 15. Following is the program:

MONDAY, DEC. 13.

10:00 A.M.—Welcome and Response.

Address of President, C. E. Bartholomew, of Ames.

Report of Secretary-Treasurer—S. W. Snyder, Center Point.

Appointment of Committees.

2:00 P.M.—"The Advantages of Beekeepers' Associations to the Industry"—C. P. Dadant, Editor American Bee Journal.

"The Advantages of Cooperative Honey Exchanges for the Marketing of Honey"—P. J. Doll, Manager Tri-State Honey Exchange.

Answers to Questions.

7:30 P.M.—Lecture on "Beekeeping"—(illustrated—E. R. Root, Editor of Gleanings in Bee Culture.

TUESDAY, DEC. 14.

9:00 A.M.—"Outdoor Wintering"—Dr. E. F. Phillips, Department of Agriculture, Washington, D. C.

"Something"—Dr. A. F. Bonney, Buck Grove

"Queen Rearing"—Prof. Francis Jager, University of Minnesota.

2:00 P.M.—"Bee Diseases in Iowa in 1915"—Frank C. Pellett, State Bee Inspector.

Answers to Questions.

7:30 P.M.—Lecture on "Ecology of Honey Plants"—(illustrated—Dr. L. H. Pammel, Iowa State College.

WEDNESDAY, DEC. 15.

9:00 A.M.—"Pollenization of Economic Plants"—L. A. Kenoyer, Iowa State College.

"Honey Vinegar"—C. E. Bartholomew, Iowa State College.

2:00 P.M.—Reports of Committees.

Election of Officers.

Adjournment.

NOTE.—The time not filled by the above papers will be taken up by the answering of many questions by shorter papers. These "Questions" will be assigned to members who will be given time to prepare their answers and thus fully cover the subject.

◆

Propagating Basswoods.—I have obtained some basswood seed from the timber and intend to grow the same. I understand that it is rather difficult to get the seed to grow. Please give the benefit of any experience and knowledge you may have available on this subject. J. F. COYLE.

Penfield, Ill.

Although I have never planted basswood seed myself, I was informed long ago that, like a number of other seeds, it is slow in germinating. A writer in one of the bee papers, some 30 years ago, gave the information that it did not usually germinate until the second year. It should be kept in the ground so as to let it dry as little as possible. Perhaps a scarifying such as is in use for sweet clover seed would have a beneficial effect.

A number of people have recommended growing basswood trees from cuttings. The cuttings should be of straight, young wood and about 6 or 8 inches long, the lower end being cut about an inch below a good bud. By keeping the cutting in warm earth in a hot-bed, it is said it will make roots readily, like grapevines or willows, provided it be kept moist enough.

Our method of growing basswoods has been to take sprouts from the forest where basswood trees have been either cut down or grubbed. Those sprouts usually have rootlets in sufficient number to keep the tree alive after it has been separated from the main root upon which it grew.

◆

Canadian National Exhibition.—The exhibit of the Apicultural Department of the Ontario Agricultural College at the Canadian National Exhibition occupied one table and part of another, the rest of the end of the building being taken up by the other departments of the college. The exhibit consisted of a model of an apiary constructed of hives built to scale 3 inch to the foot. These were arranged in order as they would be in the regular apiary, the table being covered with green burlap to represent sod, and the hives interspersed with small palms and ferns to represent trees and shrubbery (Fig. 1). There was also a model of a quadruple hive winter case also built to a scale, and several small implements used in beekeeping, including the gearing of a new friction drive power honey extractor (Fig. 2).

The feature of the exhibit which attracted the most attention, however, was a tall observation hive containing five Langstroth combs, one above the other, covered with bees, also a single comb observation hive and a pound package of bees (Fig. 1). An attendant was constantly in charge of this exhibit during the two weeks of the exhibition, and was kept busy most of the time answering questions about bees and honey.

This Canadian National Exhibition is an annual affair, which has been conducted for a great many years. In 1913, there was a total attendance during the two weeks of about 1,000,000 people. Owing to war conditions, however, the attendance this year was a few hundred thousand less than that, although it was more than last year. As the entertainment features of the exhibit are very small comparatively, and are confined to the midway which is placed off in one corner of the grounds, the educational value of this exhibition on the whole is very great.

Guelph, Canada. MORLEY PETTIT.

◆

Kootenay Beekeepers' Association.—The first annual meeting of the Kootenay Beekeepers' Association was held at the City Hall, Nelson, on Friday, Sept. 24, 1915, the last day of the Nelson Fruit Fair, at which there was a representative attendance of members from Nelson and the surrounding districts. The report is as follows:

"The association, organized in September, 1914, is the first beekeepers' association to be formed in British Columbia. Seventy-eight members have been enrolled. Unfortunately the past season has not been a good one for honey production in this section of Province. Exceptionally fine and warm weather prevailed during March and April, when the bees went ahead and promised well, but the following three months, May, June and July, were excessively wet and cold, consequently the clover, on which we mainly depend for our surplus honey crop, yielded but very little nectar. The honey that has been taken is much darker in color than usual. In many instances colonies were actually starving in June, and would have succumbed had they not been fed with sugar syrup.

"The honey label adopted by the association for the use of the members, to promote uniformity in putting up honey for sale, has met with general approval, and 3825 have been sold to date."

The balance sheet, showing an excess of assets over liabilities of $43.35 was approved and passed.

The following officers were elected for the year ending Sept. 30, 1916:

Hon. President, W. E. Scott, Deputy Minister of Agriculture, Victoria; President, Major-General Lord Aylmer, Queens Bay. Vice-Presidents, G. E. Parham, Superintendent, Dominion Experimental Farm, Invermore; G. Fleming, Nelson. Executive Committee, J. J. Campbell, Willow Point; Mrs. Casler, J. Hyslop, C. G. Johnson, W. H. Hixon, W. J. Mohr, of Nelson; J. Blinco, Creston; B. Lockwood, Fruitvale; E. Alpaugh, Kaslo; R. E. Plowman, Roseland; J. H. Vestrup, Nakusp; N. W. Collins, Grand Forks; H. G. Slater, Westley; T. S. Gill, Cranbrook; G. F. Attree, Queens Bay; James Johnstone, W. Romain, Nelson; A. E. Watts, Wattsburg. Hon. Secretary-Treasurer, W. J. Sheppard, Nelson. Hon. Auditor, Hixon, Nelson.

◆

Michigan's 50th Annual Meeting.—On Dec. 15 and 16, the Michigan State Beekeepers' Association will hold their 50th annual meeting at Grand Rapids.

This meeting promises to be one that will set a new record in interest and attendance, and one that will be remembered by those present as the best ever.

One of the special features will be a banquet supper on the evening of the 15th. This banquet is the gift of Messrs. G. B. Lewis, of Watertown, Wis., and A. G. Woodman, of Grand Rapids, Mich. A banquet at which all the members get together seems to add a finishing touch to any gathering, and we feel sure the beekeepers will show Messrs. Lewis and Woodman their appreciation by turning out in record numbers.

The program will be brimful of good things, and many of the notables of the beekeeping world will be there. Full particulars of the program will be published next month.

The headquarters of the association will be the Eagle Hotel. This hotel has been our headquarters on many previous occasions, and is well known to the beemen. Rooms range from 75 cents up.

Many beekeepers do not attend meetings of this kind because they fail to realize their full value. The program alone will repay the trouble of attending, but this is only a part. The beekeeper who wants to learn more about disposing of his crop of honey is usually able to obtain this information in personal discussions with the other beekeepers present. Send us in your questions any time and we will endeavor to answer them in a satisfactory manner at the meeting.

Every beekeeper in Michigan is invited to attend, and is expected to bring along another beekeeper to join with us in making the 50th annual meeting of the Michigan Beekeepers' Association bigger'n ever.

F. ERIC MILLEN, *Sec.-Treas.*
East Lansing, Mich.

Honey Shortage in England. — The prospects for "heather" honey in England this season are not bright. June frosts, which blighted the heather buds, was followed by a wet summer. The bees of the United States have produced a splendid quantity of honey this year, averaging 36.2 pounds per colony against 32.2 pounds last year. Over 50,000,000 pounds of honey are produced yearly, hence the English shortage can readily be supplied. This season's large yield, together with increased receipts of honey from the West Indies, has depressed prices. American honey exports were only $136,000 in value in the 12 months ended June 30, 1914, of which but $4000 went to England.

Exports of honey dropped to $114,000 during the months ended June 30, 1915, of which $54,000 went to England. Germany was formerly the largest purchaser of American honey, taking in the fiscal year 1912, $134,000 worth; in 1913, $107,000 worth; in 1914, $75,000 worth, and for the year just closed only only $10,000 worth.—*United States Consular Reports.*

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

The Season

The season just closed marks, on the whole, a slightly more encouraging condition among the beekeepers of the coast than prevailed last year. There was no more honey taken per colony than last year, and we have had a fair sized battle with European foulbrood. Prices, however, have been just a little better and more sales have been made.

But one lesson, I think, we have learned: That it is a mistake to hold honey over unless prices are extremely low. Early sales generally average best. It seems that the European war has demoralized our amber honey trade for the last two seasons. This has also borne down the price of white honey, as many will use the cheaper article regardless of quality. A surprising amount of ignorance still prevails among our home consumers and retail grocers regarding the different grades of honey. This also leads to careless methods of grading among beekeepers, the idea prevailing that people will pay as much for amber, especially for light amber, as for white.

European Foulbrood

Our beekeepers are making as strong a stand as possible against our new enemy (new here), European foulbrood. Almost to a man they are requeening and doing all that can be done.

For the encouragement of all who have this scourge to contend with, I will cite an instance of persistent effort on the part of a beekeeper, whose apiary I visited last week. Two years ago this disease appeared in the Santa Ana Canon apiary of Mr. Oscar Downs, the apiarist mentioned. He then had 300 colonies. The first year the disease showed but slightly. At the beginning of the present year, however, it broke out badly, and at least 150 of his colonies were diseased in the spring. He has worked among them valiantly, requeening and destroying all infected matter, and strengthening where necessary by uniting. He has now an apiary of 200 colonies of good, clean Italians.

When he and I looked them through we found but one colony slightly infected. He bought over 100 queens this season from one queen-breeder. This I consider a pretty good record of cleaning up an apiary, besides taking five tons of honey. Many are doing the same and getting results equally satisfactory. Of course, I am waiting anxiously to see how these apiaries will show up next spring, for we may expect some return of the disease.

The enclosed photograph shows Mr. Korse at work in his honey-house during the busy season. The Korse Bros. have been successful in migratory beekeeping, wintering their bees in the valley orange groves and moving to the sage belt after extracting from the orange flow.

OSCAR DOWNS, OF ORANGE, CALIF.

Honey Grading

There is certainly a much needed "campaign of education" among the consumers and merchants as to the relative grades of honey and the prices

OLIVER KORSE AT THE CAPPINGS MELTER
The Korse Bros. apiary is in the Santa Ana Mountains

they should bring. Merchants should know and display the different grades of extracted honey as they now do comb honey, and should enlighten themselves as to the prices they should pay for the different grades.

It gives a beekeeper a mild shock to deliver an order of several cases of water-white honey to his local grocer, who has ordered the best, and have him question the price when asked only 6 cents, saying he can buy honey at 3½. This happened in our locality this season. The grocer had heard of amber honey selling at 3½ cents, and honey was honey to him—nothing more. And while he is an intelligent man, running a lucrative business, it took considerable explanation on the part of the beekeeper to convince him of the difference. This instance is cited merely to show the need of educating our market in order to keep prices, especially retail prices, anything like where they should be. And this, I suppose, fellow beekeepers, is up to us.

Our fancy grades of white honey are not bringing us what they should, even under present depressions, and partly, at least, because the consumer does not know the difference.

The National Association is doing its duty in this respect, and all other associations should be affiliated with it. A harmonious united effort is what we need. There is a movement afoot in southern California for something of this kind, the progress of which will be reported later.

California in the Fall

Our honey-plants both wild and cultivated, upon which we depend for surplus, are now enjoying their autumnal rest. They have come to their perfection with the season's rainfall or the provided irrigation flow, yielded their quota of nectar-laden blossoms, fruited, and the crops, useful to man, have been gathered. Even the thrice useful bean has been harvested and the straw baled and sold as roughage for the dairy cow.

The California landscape is now tawny and brown, relieved only by the green of the orange and eucalyptus groves and the dark purple of the distant mountains. The sages are unobtrusive masses of brown and gray, and are shrivelled to mere ghosts of their former selves by the heat of summer and the dry winds of autumn. The dry heads of the wild buckwheat are a rich chocolate-brown, persisting on the stem and almost as much prized for dry bouquets as the beautiful white immortelle which silvers the canons in spring.

But always there is something for encouragement, even for a bee. The dry stubble fields are now covered with the silver foliage and small white blossoms of the drouth-weed and the green and purple of the bluecurl. This last is sometimes called turpentine weed, on account of its strong scent. It is really a beautiful plant, seen either at close range or *en masse*, as it casts a soft purple haze over the fields. Like its sister bluecurl, the showy "Romeo," its stamens are also blue or purple and much exerted, or extended beyond the corolla tube and recurved—hence, the name bluecurl, commonly given to both species.

BLUECURL OR TURPENTINE WEED

From both the strong scented bluecurl and the drouth-weed, the bees gather considerable nectar. This is quite a help for winter stores. The bluecurl range is extending year by year over our stubble fields, encroaching on much of the drouth-weed's heretofore undisputed territory.

The creamy clusters of the fall-blooming eucalyptus are covered with bees to such an extent that their hum is almost like that of a swarm. There are also several species of wild composites which attract bees along the dry mountain streams at this season.

FAR WESTERN BEE-KEEPING

Conducted by Wesley Foster, Boulder, Colo.

The European foulbrood situation is apparently affected more by locality and the seasons than is American foulbrood. Dr. Miller, you say that it is a waste of money to melt up combs affected with European foulbrood, and you are doubtless correct in your locality with your seasons, but any but the most stringent methods have met with practically an entire failure here in Colorado. I have had a dozen apiaries under observation the past season, comprising nearly 400 colonies. Caging queens and requeening has not met with any success at all. The Italian queens bought by the beekeepers and coming through the mails do not seem to have the resistance that vigorous young queens reared at home do. No evidence has been presented to us that Italians are any more resistant than hybrids. One colony of near blacks has resisted the disease for two seasons and stored large crops of honey in an apiary that was practically wiped out by the disease. May it not be a characteristic of some colonies to refuse admittance to drifting or wandering bees?

One result of the introduction of new Italian stock was to demonstrate how thoroughly bees mix up in an apiary. It was but a very few days after young Italian bees began hatching until golden and yellow bees were seen going and coming at nearly all the hives in these apiaries.

The net result of the trial of caging queens has been to drive the beemen to a decision that requeening and a transfer is the best solution. The slogan to "keep all colonies strong" is good, but it cannot be done by uniting, with European foulbrood in the apiary; and, furthermore, it is not very practicable. A weak colony of bees affected with European foulbrood, requeened and transferred in a good honey flow, can "come back" to prosperity. Such colonies have done it time and time again. So much depends upon the season.

The district in which European foulbrood is present in Colorado is quite desirable from a honey-flow standpoint. Sweet clover is very thick, and considerable alfalfa is grown. If a weak colony can once get away from the disease and have a young queen, a very few days are required to fill the hive with comb, honey and brood. As several people said to me, "What is the use of wasting time trying to save the old diseased combs when the bees build new ones so fast?" The thorough clean up of European foulbrood pretty much on the same plan as for American foulbrood, has meant hundreds of dollars to some beekeepers in Colorado, and the advice that combs can be saved, and the disease cleaned out of colonies by caging the queens or requeening without transferring, has cost others hundreds of dollars.

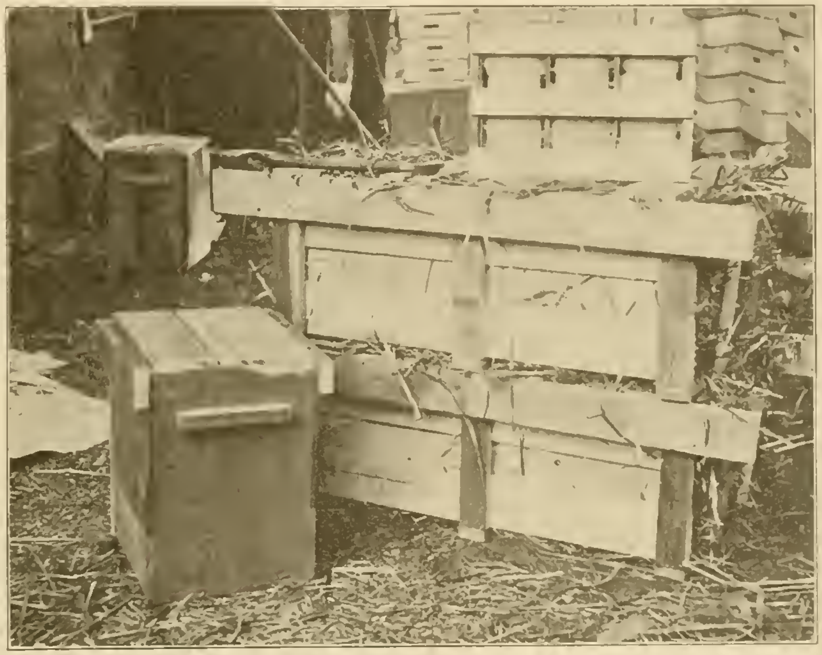
Dr. Phillips' recommendations on treatment of European foulbrood, as given in "Treatment of Bee Diseases," has been found to get results. The percentage of cures from transferring (with requeening) has been almost as high as for American foulbrood. We have no success whatever to report from caging queens. Some colonies where the queens were caged were very strong, and they made no honey, but did build up in *just fair* shape for winter. Similar colonies that were transferred made good yields of surplus honey and are in better shape for winter.

Arranging the hives in the apiary so there can be no drifting or intermingling of bees is very important. No kind of treatment will succeed with hives placed in close straight rows.

The review of the pamphlet of Oswald Muck, in the September American Bee Journal, deserves the careful attention of beekeepers. One thing is to be regretted in this review, and that is the author's description of "Boesartige" or American foulbrood His description of "Stinkende" or European foulbrood is so similar to our American foulbrood that it leaves a question in our minds whether his findings are of any value to us here. His description of "Sauerbrut" answers very well *some* of the characteristics of European foulbrood.

His statement that "Sauerbrut" will run into "Stinkende" brood is interesting, as we have seen no European foulbrood that approaches "Stinkende" except in this particular. In the district where European foulbrood flourishes American foulbrood has been present for years. The colonies that are affected with European foulbrood in the spring do not show much if any symptoms of American foulbrood because the brood is all or nearly all killed before it becomes old enough for American foulbrood to affect it. But as the European foulbrood begins to disappear in July, August and September, the American foulbrood begins to make its appearance. It is a very simple and clear proposition with us, and I am wondering if this may not be the case with Mr. Oswald Muck, when he says that "the lighter form is 'Sauerbrut,' which can readily turn into 'Stinkende' (European) foulbrood, and finally into American foulbrood."

It is rather strange to me that "Sauerbrut" is called the lighter form, for with us there is scarcely anything left to get a heavier case after this lighter form has had a free chance.



FOUR DOUBLE-TIER CASES OF COMB HONEY PACKED IN CARRIER CRATES WITH STRAW ON ALL SIDES WILL CARRY SAFELY BY FREIGHT IN COLD WEATHER

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

American Foulbrood at Marengo

July 21, in No. 98, a single cell of dead brood was found that looked as if it might be American foulbrood. A few days later no trace of it could be found, but some days later still a good many cells were present. Dr. Miller thought it American foulbrood, and that opinion was confirmed upon sending a sample to Washington.

It would appear that the disease does not travel very fast—at least it did, not do so in this case, for it had been within 12 miles of Marengo four or five years ago. The disease was found in another colony Aug. 11, and in three other colonies, Aug. 19, 20, and 28.

Diseased brood from other colonies was piled on No. 98, the first victim; the bees of 98 were destroyed by carbon disulfide, and the combs in the three stories burned in the furnace. Although carbon bisulfide is better than sulphur to destroy the eggs and larvæ of the waxmoth, it did not prove so good as sulphur for killing bees; its work being less speedy and sure. But fire proved a sure disinfectant, destroying bacilli and spores promptly, while the frames and combs proved good furnace fuel.

As it was getting a bit late in the season, it was thought best not to give the same treatment to the other four colonies. They are to be left until they have no longer any unsealed brood. Then their frames are to be taken from them (not burned) and replaced by combs of sealed honey, and that's all the treatment they are to have. This is a form of treatment recommended by the late Mr. McEvoy. Although not advisable to use such a form of treatment in a case found early in the season, it seems to have its advantages in a case late in the season. The colony is not in the least weakened by having its combs exchanged, and should begin the following spring just the same as if no exchange had been made, whereas by the shaking plan the colony has a severe set-back in its work.

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European Foulbrood

This year we had six cases of European foulbrood, not any of them very serious. June 22, Nos. 93 and 94 were found diseased; June 29, Nos. 4 and 26; July 1, No. 95; July 21, No. 96. It will be noted that four of them were in consecutive order, which looks just a little as if the disease might have been carried by bees entering the wrong hive by mistake; although it might not have been so. In each case the treatment was caging the queen 9 or 10 days. In no case was there a return of the disease.

No doubt it will appear again next year, if not from something in our own apiary, from bees of our neighbors. But when taken timely it does little harm. It would be a comfort if we could say the same thing of American foulbrood.

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The Season at Dr. Miller's

In the August number of this journal, page 264, some account was given of the early part of the season at Marengo. As there stated, 260 supers were on the 92 colonies July 1. A pretty big allowance, but it must be remembered that an empty super was kept on top, as well as an empty super at the bottom; that is, an empty super was added at the bottom as often as the lower super was about half filled, and an empty super was kept on top all the time, to be used by the bees only if they were crowded into it. But we were not in great fear all the supers might not be needed if the weather were favorable, for the constant rain kept the clover growing, even if it didn't let the bees work. Indeed, we kept adding until July 21, an inventory showed 1 hive with 1 super, 1 with 2, 15 with 3, 33 with 4, 33 with 5, 5 with 6, 2 with 7, making 389 supers on 90 hives, or an average of about 4⅓ supers to each hive. The supers on 3 of the poorer colonies had been replaced with extracting combs, or rather brood-combs, for they were destined for feeding next spring rather than for extracting.

Rain, rain, rain, continued the rule, and in the last week of July the bees were kept indoors 4 successive days by the wet and cold. Fire was needed in the furnace a number of times when other years we would have been hunting a place in the shade. But with the hopefulness of beekeepers we kept looking forward for the bees to begin hard work again. For some reason the bees didn't begin, in spite of abundant bloom of clover and other plants, and by the last of August we gave up hope.

Just then, for some unexplainable reason, there began one of the heaviest flows we ever had. Editor E. R. Root, who was here Sept. 6 with Dr. E. F. Phillips, says of it in Gleanings in Bee Culture: "At the time of our visit there was such a roar of bees about his yard that it looked as if there was a big swarm in the air; in fact, several of them. Nay, rather it looked exactly like a wholesale case of robbing; but it was neither. An inspection of the apiary showed that large streams of bees were going into every one of his hives. We never saw such a furor of bees before in so small a yard—92 colonies, spring count."

Then Mr. Root set out to find out what the bees were working on, went through bush and briar, over or under barbed-wire fences, got lost, and having started west finally relieved the growing anxiety of his friends by making his appearance from the east. But he wasn't so very much wiser as to what the bees were working on. He found them on clover, heartsease, aster, and other plants, but not in apparently large numbers on any one plant. Perhaps their affections were somewhat evenly divided. It may be said in passing that bees never make a very big show on white clover, at least not here, even when white clover is doing its best. Possibly because there is no other plant so thoroughly distributed over the ground.

But the cold and wet again closed up business, and the last day of September saw all sections taken from the hives. At this date, Oct. 5, there has been no killing frost, clover and other bloom is still plenty, but honey plants do not seem to yield out of season, even if still plenty. At any rate, with the thermometer at 49 degrees in the warmest part of the day it is not strange that bees keep by their own fireside.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Getting Ready for Next Season

Long before the last case of honey was packed, lumber was bought and laid down out of which we were to make our next season's supplies and our regular machine man and helper started cutting and working it up. Every man who has our bees in charge made known his needs in August, and a bill of same was sent in. By the time the first man takes off and packs his last case of honey and puts away his last colony of bees for winter, his complete needs in the way of supplies will be in his shop ready for him, and he will go right to work setting them up. Very early in the season next year he will be ready to haul out and distribute them where needed. In this particular, all progressive beekeepers should fall in line and be ready to go into apiary work next spring.

In my case there was a general understanding personally between each man in charge and myself as to what would be best to do. There is nothing like a thorough business understanding and good congenial agreements between man and man working together.

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Apiary Tidiness

I have seen a few apiaries in my travels that were kept almost over tidy. But the average apiary in Dixie in this particular is far lacking in what it should and deserves to be. Some few apiarists have the high quality of tidiness about their work and somehow leave things looking neat wherever their hands may touch. We greatly admire this quality in one of our men, and we often wish more possessed it. It does help the looks of an apiary so much when it is kept clean, with everything in proper place, etc., and it takes but a very small amount of extra work to do this.

On the other hand, it leaves a bad impression to visit an apiary that has not had justice in this particular, covers, bottoms, stands, etc., lying scattered about, a great accumulation of straw, leaves and trash, and the hives sitting around in all kinds of ways and tilted over one way or the other. It is a pity more beekeepers do not cultivate this good quality in their general apiary work. I am aware that the amount of business one has to look after has much to do with it, for some beekeepers are badly rushed at times and cannot keep things in place, but there is a time when he could do so.

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Wanting Locations

During the past 60 days there have been a number of beekeepers wanting me to assist them in getting well located in Dixie. They want to move into our part of the country and join our ranks.

I want to say to these and others that I refrain from too favorable answers to such requests. I have always been as generous in this as I could well be, locating and helping these new comers the best I could. But failures have resulted and a lot of bitterness followed. So I absolutely refrain from taking up this matter personally with any one further than what is said through our Dixie Department. It is very easy to over-estimate our country for honey production. Great success here in beekeeping can only be obtained by a young man with grit and other qualifications, one who is willing to come here and start right at the bottom and learn and work up through toil and hardships until the business is well established.

I know an apiarist who came here years ago from the North who is a genius in our line, and he has been hammering away at beekeeping, and it is only in the last few years that he has made any money in beekeeping.

Locating Apiaries

It is not a pleasant task to move apiaries to new locations at the demand of landlords. I have had lots of experience of this kind, and in these latter days I am far more particular locating apiaries than formerly. It is better to locate one in a remote place than near a farm house unless a plot or site can be obtained which the landlord cannot very well utilize, for sooner or later he will get tired of the bees and forget his agreement with the apiarist, and consider all the recompense given too small an amount.

Mr. J. R. Durden's apiary site here shown is an ideal one, a rock cliff in the edge of the field and the bluff below, giving the bees a great sweep over the country and the very best hive stands. In most sections it might not be convenient to get on a rock cliff, but similar places can be obtained where the land cannot very well be cultivated or utilized by the land owner. A worn-out spot left because it is too poor to tend, with a young growth of trees coming back on it also makes an ideal site. At any rate, it pays to look around and find such a place if possible and keep down expense and trouble.

APIARY LOCATED ON A CLIFF—J. R. Durden, Macon, Ga.

CANADIAN BEEDOM

Conducted by J. L. Byer, Mt. Joy, Ontario.

Favorable Conditions for Next Season

Colonies throughout Ontario are going into winter quarters in fine condition. Last fall hosts of old bees were in the hives, while this year the opposite is the case. Clover is looking good everywhere, prospects are bright for the season of 1916 at present. Of course, the shadow of the horrible war is hanging over everything, and when we speak of prospects looking so good, one cannot help but wonder how the beekeepers and others in the ravaged countries are faring during these awful times. Truly, we have much to be thankful for on this favored continent, and it should bring a feeling of shame to us when we are prone to grumble over some of the small things of life not going as we would wish. This reflection is purely a personal one—if it is applicable to any other reader, swallow the morsel.

Death of J. K. Darling

We have learned of the death of Mr. J. K. Darling, of Almonte, Ont. Mr. Darling was one of our pioneers, and until a few years back a prominent figure at our conventions. He was president of the Ontario Association at one time. I always found him a kind and true friend, a gentleman in every way. I have had no particulars of his death, and was surprised and grieved to hear of his demise. The sympathies of the members of the Ontario Association and other beekeepers will go out to the bereaved family.

When to Feed for Winter

When it is necessary to feed the bees for winter, at what time should the work be done? This is a question frequently asked, and it is a hard one to answer, as so much depends upon local conditions. The late Mr. McEvoy used to tell me to do most of this work in August, and then finish early in September, advice no doubt good for his locality or he would not have followed the plan year after year. Not so many years ago, while I did not feed as early as he recommended, yet I could have done so profitably, as our late summer conditions were much the same at that time. But under existing circumstances I would not think of feeding so early. It would be a waste of time and sugar at the former period. We had no buckwheat or any other bloom after clover was over, while now we have acres of buckwheat, and even if no great surplus is stored, enough comes in to keep the bees breeding rapidly until late September.

This year I started feeding about Sept. 12. Had there only been one yard to feed a later date would have been selected, as much brood was present in many hives. October 12 was a fine warm day, and I transferred six colonies from single-walled hives into packed hives. Each colony had brood in all stages, most of them having the brood in two combs. These colonies had been fed heavily just a week ago, but that was not responsible for all of the brood present, as much of it was sealed. At this date, Oct. 14, our feeding is done, but even when this appears in print, if you have feeding to do get busy and feed a two to one syrup, and do not worry about it being late in the season.

My opinion has changed very much of late years on this question, and if it were possible to have all my needy colonies fed the same day, I would probably leave them until late October, and then feed a two to one mixture. At the north yard all the bees were fed for winter where necessary, and all packed away in the winter cases by Oct. 8. Owing to the presence of so much aster honey in the hives, we deem it a good policy to prepare early for winter so that the honey will be better ripened. Then, again, winter conditions seem to set in a little earlier than here in York county, the nights especially being much cooler in the fall.

Another peculiar condition we have noticed is that although the aster flow comes on later than anything we have in York county, yet brood-rearing ceases much earlier than it does here. In other words, while a buckwheat flow here in late August will cause the bees to fill the hives well with brood, the aster flow up north causes the bees to cut down brood-rearing and fill the brood-nest with honey. It also cuts down the field force very rapidly, and the bees up north go into winter quarters with smaller clusters than they do here. I have been wondering if this is a condition peculiar to all northern localities where there is a September flow.

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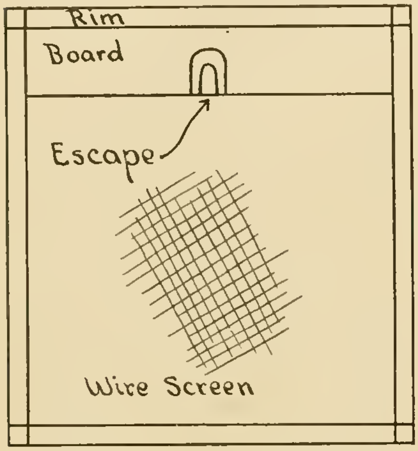
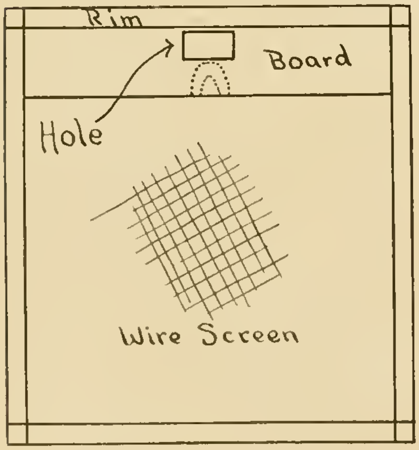
That Escape Board

I have read Mr. Holtermann's article on page 307 with interest. I am glad that the escape board described has given perfect satisfaction in his hands, but from impartial reports from some others, it seems that all have not had the same success. Mr. Krouse, of Guelph, says that with him the bees are not cleared as fast from the supers as with the old style board escapes. But even if it does not work so rapidly, the fact that the honey does not cool off is a factor that more than compensates for any minor defects in other ways.



Upper Side of Escape



Under Side of Escape

In response to my request for reports on wire-cloth escapes, Mr. O'Neil of Minnesota, kindly sent me a diagram and description of the wire-cloth escape board he has been using with success for some time. A rim with generous bee-space on both sides is nailed around the edges of the escape board, and at one end a strip three inches long runs full width of the board, and in this the Porter escape is inserted. The escape is cut off at one end, across the hole where the bees ordinarily go *down* before going through the springs. Thus, the bees walk straight into the exit instead of first going down and then turning as they have to do in the ordinary escape.

The accompanying cut will explain the construction fairly well. At the north yard we cut down about 25 of our solid board escapes, and fixed them as recommended by Mr. O'Neil. I am sorry to say that they do not work as rapidly as the old style boards, but we shall by no means abandon them, for the valuable feature, as before mentioned, is that the honey does not cool off. We used single exit escapes, and next year if all goes well we shall try the double ones and see if it improves matters any.

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The Alexander Veil

There is a bit of humor to that picture on page 301, where Mr. Pleasants is "showing the queen to the visitors." The visitors, most of them ladies, are bare headed while the apiarist is inside of something which looks like a barrel, the same size at each end, which barrel I presume is named the Alexander veil. Admitting that this "contraption" is "a joy forever," is there any one who will affirm that it is "a thing of beauty?" How any one can wear with comfort such a head gear is beyond me, but "tastes differ" no doubt.

There is one thing about it that is commendable, it must surely be bee-proof, in fact, almost bomb proof. But it must be cumbersome and in the road a great deal. Anyway, I prefer the light veil on the straw hat when a veil is necessary, and this is only when extracting is in progress. A few extra stings will be taken with good humor rather than have my head done up in wire-cloth every time I look into a hive.

[We have no liking for the Alexander veil either, but we found it has many adepts among European beekeepers—EDITOR.]

CONTRIBUTED ARTICLES

The Place of Botany in a Beekeeper's Education

BY L. H. PAMMEL.

(Read at the Inspectors' Conference in Keokuk Iowa, Sept 8.)

THE State Bee Inspector, Mr. Frank C. Pellett, invited me to address you on the topic as announced in your program. I can assure you that I gladly accepted his kind invitation to address you, not that I can bring you much of a message, but I am always glad to help Mr. Pellett, who has done so much for the Iowa beekeepers and those who are interested in study of the great out-of-doors. In other words, Mr. Pellett is trying to lead a lot of us to study nature. I am, moreover, under obligations to Mr. Pellett for having postponed this meeting to Sept. 7 so I did not have to hurry back from my summer vacation.

Botany, I need not tell you, should occupy an important place in a beekeeper's education. It is, next to the subject of entomology, an important one for you.

To me, it is a fascinating subject, and we could make much more of it than we do. It goes without saying that a beekeeper should begin his botanical training at an early age. It is not merely sufficient to know a few plants that are useful to obtain honey. So I would begin the botanical work by studying the morphology of plants; namely, the structure of the root, leaf, stem and flower. In other words, before the beekeeper can become proficient in the identification of plants he must know something about the structure. Let a study of the form of plants be taken up thoroughly. Should you not have had the pleasure of a college or high school education, get some book like Leavett's Outlines, a revised edition of the old Gray's Lessons. So far as the general morphology of flowering plants is concerned, nothing better has ever been published than the admirable and simple books of Dr. Gray. There are, of course, other books, splendid in their way, it does not seem to me that they meet all of the points. Such books as the Bergen and Davis' Foundation of Botany, Atkinson's Text Book of Botany, Coulter's High School Botany were not written primarily for the taxonomist. They are splendid as general botanical works, but they do not meet the requirements to become familiar with the terms in systematic botany. The student should have at least one semester of morphology.

I would follow morphology with a course in systematic botany, "The mother of all botanies." I place systematic botany or taxonomy second because it should naturally follow structure. I think it a wise policy to have the student of plants become familiar with our common plants as soon as possible. The plant life about us is always of interest. To know the early blossoming plants, the first harbinger of spring, the hepatica, willow, wind flower, bloodroot, and many others is always a delight. It makes a person young, to greet the old friends by name. *Hepatica acutiloba* or *Anemone nemorosa*, etc. There is a practical side for the beekeeper. We want to encourage the growing of plants that are useful to us in our business. We want to know what plants of the *Ranunculaceae* furnish honey, or the *Compositae* or the *Leguminosae*. The beekeeper above all should be familiar with all of the honey plants in his vicinity. I think he should be an up-to-date botanist on the flora of his region.

I feel sure that most of the beekeepers know more about plants of their vicinity than the average layman in the community. The beekeeper should know, for instance, the method of distinguishing most of the families of flowering plants in the State. Here, I may ask a few questions. How many of you know that buckbrush (*Symphoricarpos orbiculatus*) and snowberry (*S. occidentalis*) are related to the Tatarian honeysuckle (*Lonicera tatarica*), one of the splendid early blooming honey plants? How many know that the hoary vervain (*Verbena stricta*) is related to the cultivated verbena (*Verbena aubletia*)? Now the latter is not a good honey plant though the former is. How many know that the Oleaster or Russian olive (*Eleagnus angustifolia*), a splendid honey plant, is related to the buffalo berry (*Shepherdia canadensis*)? How many know that our willows (*Salix*) are related to the cottonwood and poplars? You know, of course, that the silver maple (*Acer saccharinum*) is related to the hard maple (*A. nigrum*), both species good honey plants. You recognize also a likeness to the box elder, of no use as a honey plant, although it furnishes some pollen.

Do you recognize that the prairie rose (*Rosa pratincola*), agrimony (*Agrimonia eupatoria*) and black cap raspberry (*Rubus occidentalis*) are related and belong to the rose family, Rosaceae, like the wild crab (*Pyrus ioensis*), the cultivated apple (*Pyrus malus*), the American plum (*Prunus americana*) and cherry (*Prunus cerasus*)?

The beekeeper should make a comparative study of these plants from the standpoint of relationship. There are certain points in the external resemblances of plants the beekeeper can become familiar with very readily. Take, for instance, the square stem of the mint family with the two-lipped corolla. The majority of such plants belong to the family *Labiatae*. When the flowers are borne in heads like the sunflowers and dandelions they belong to the *Composite* or sunflower family. When the flowers are borne in umbels like the carrot and parsnip they belong to parsnip family of *Umbelliferae*. When the flowers have four green sepals and four petals arranged in a cross they belong to the mustard family the *Cruciferae*, and so I might go on. There are certain external and striking characters which will enable any one to readily place a plant.

We come now to consider another side of the subject, one which certainly concerns the beekeeper. I refer to physiological botany. There are two phases of the subject—one deals with the function of the plant; how the plant elaborates its food; how the plant stores its food; how the plant conducts its food; how the plant secretes nectar, and why. Then there is the subject of ecology. This I consider of utmost importance. Ecology has to do with the environment of plants. How the growth is influenced by climate and soil. The relation of plants to pollination. Every beekeeper should make a study of relationship of insects to the pollination of plants. I think this is not only of fundamental importance to the horticulturist and agriculturist, but to the beekeeper.

Beekeepers should always keep in mind that bees of all kinds are of great value to the horticulturist. Without bees the horticulturist would get small returns in the way of fruit. Omit the bees and the apple crop would be cut very short, and for this reason I believe every fruit grower should keep bees as a side line.

Now, every farmer knows his clover seed crop will be cut short unless he has some bees. Bees are essential then for the farmer and horticulturist. There are many other most interesting questions concerning the pollination of plants.

The marvelous adaptation between insects and flowers and the structure of flowers adapted to some insects has engaged the attention of such men as Darwin, Hermann Mueller, Delpino, Trelease and Roberts. A beekeeper might well spend much time in studying these plant relations.

I would also add courses dealing with fungi and bacteria. The latter work is now made a part of a separate course. The beekeeper should have not only a general knowledge of bacteriology, but more especially the bee diseases which are playing such havoc with the beekeepers in all sections of the country. The splendid work done by Dr. Phillips is along this line. The proper relationship of bacteria to other plants should be understood, and for this reason I believe a study of the lower forms of plants is important. There are some diseases produced by fungi, and these should, of course, be studied.

May I add the best education is none too good for the beekeeper, and in conclusion allow me to thank you for the privilege of addressing you on this subject and the splendid facilities I have had here in viewing the great establishment of the Dadants. It should be an inspiration to us all.

No. 11.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(Photographs by the author.)

THERE are a number of noxious weeds that furnish honey or pollen. These plants because of their nature should never be encouraged by the beekeeper even though their value for nectar secretion could be greatly multiplied. However, they are often so persistent that they remain in spite of constant efforts looking toward their extermination. In this number we will consider a few of the less important ones.

WILD LETTUCE.

Figure 53 will give a good idea of

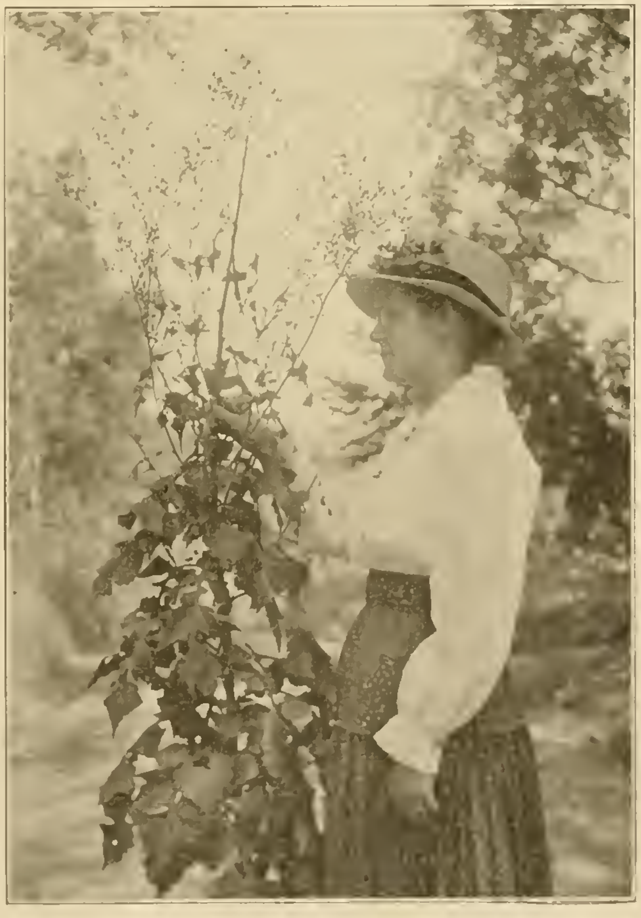

FIG. 53.—WILD BLUE LETTUCE

the height to which the wild blue lettuce, *Lactuca floridana*, grows. It is common in the woodland borders, in rich soil, from Pennsylvania to Iowa and south to Florida and Texas. The plant produces hundreds of blue flowers in late summer and early fall. Although it is of no special importance as a honey plant, the bees visit it frequently and apparently get some nectar from its blossoms. In the South it is reported as blooming in May and June. The writer does not recall having seen it in bloom in Iowa earlier than August, while it blooms into September. There are a considerable number of species of wild lettuce, some of which, like the prickly lettuce, become very troublesome weeds. The writer has not observed the bees working to any extent on any except the blue fall lettuce above described.

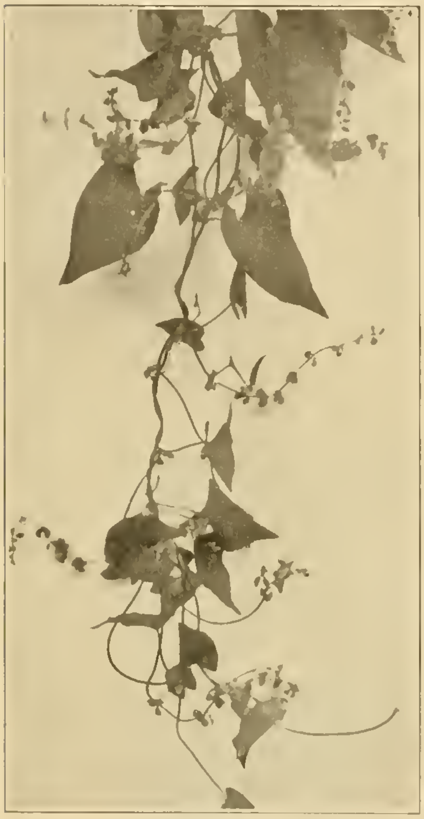

FIG. 54.—BINDWEED

BLACK BINDWEED.

The black bindweed or wild buckwheat, *Polygonum convolvulus* (Fig. 54), is only given here because the writer has received samples with reports that the bees were working on it. Personally the writer does not recall ever having seen a bee on this plant, nor can he find it recorded as a honey plant. However, it is a relative of the heartsease which is one of the best honey producers, and it is quite possible that in some localities it may be of some value. The readers of the American Bee Journal will confer a favor by writing to the author and telling him of their observations along this line. Some plants that yield nectar freely in some localities are of no value at all in others, and locality records are important. This plant resembles the wild morning-glory in habit of growth and in general appearance, except in flower, as will be seen by the photograph. It is a bad weed, common along highways and in grain fields from New England and Ontario, west to the Pacific coast, and south to Mexico. It was probably introduced from Europe.

RAGWEED.

Figure 55 shows the blossom and leaf of the great ragweed, *Ambrosia trifida*, often called horseweed. This is a very common roadside weed, growing to a height of 10 or 12 feet. It is common in Quebec and Ontario, west to Manitoba. In the United States it occurs from New England west to Colorado and south to the gulf. It is also found in Cuba and Mexico. It is especially common in the rich lands of the Mississippi valley from Minnesota to Texas.

The ragweed does not produce nectar, but furnishes large quantities of pollen in late summer and fall. There is also a smaller species, called Roman wormwood, *A. artemisiifolia*, or bitterweed. Bees do not work upon this.

WILD PARSNIP.

The wild parsnip, *Pastinaca sativa* (Fig. 56), introduced from Europe, has spread over a wide area from the Atlantic to the Pacific coast. It is common along railroads and highways everywhere. The small yellow flowers which are borne in clusters like an open umbrella, are attractive to a large variety of insects. The nectar, apparently, is never very abundant, hence it is not an important source of honey, although the plant is sometimes very plentiful.

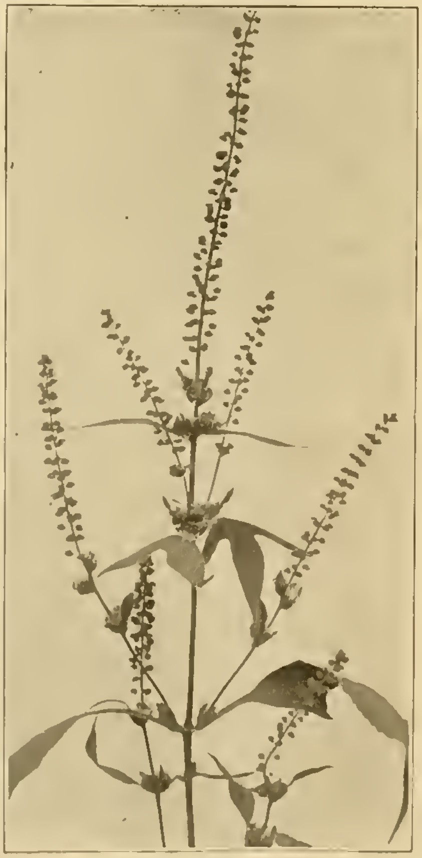

FIG. 55.—RAGWEED

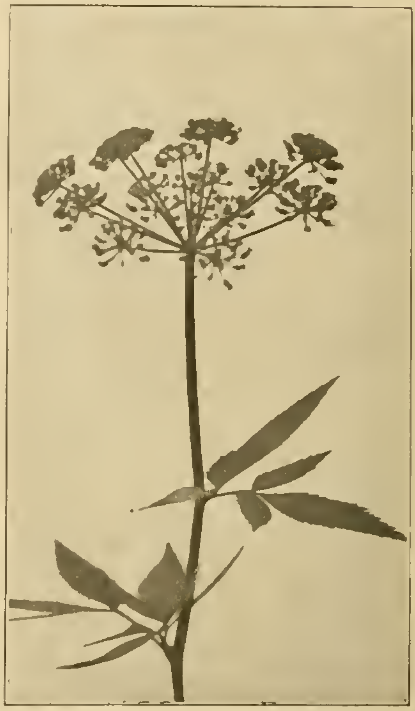

FIG. 56.—WILD PARSNIP

BURDOCK.

The burdock, *Arctium lappa* (Fig. 57), is a coarse, disagreeable weed introduced from Europe and Asia. It is now common over much of the United States. The burrs fasten themselves to the clothing as well as to passing animals, and in this manner the seeds are spread. It is a biennial, common in barn lots and waste places.

The burdock is another one of the many plants on which the bees work to some extent, that never count for very much in the total production of the hive. The sources of surplus are comparatively few in number, but there are hundreds of plants from which the bees get a taste of honey or pollen. The presence or absence of these minor plants makes great difference in the value of a locality for honey production. If there are enough of them to keep the bees busy, and sustain the colony between the flows when the good yields come, the bees are in the best possible condition to take advantage of the opportunity.

Atlantic, Iowa.

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European Foulbrood

BY H. L. ADAMS.

I WAS much interested in the discussion of European foulbrood in the "Editorial Comments" for September. I wish to call attention to some experiences of mine, during the past five years, which would seem to disprove the assumption that the disease is caused by the queen or carried on the feet of bees, or that used combs having had foulbrood in them had have disease.

Four years ago I had but three colonies alive in the spring out of 15 with which I went into winter; these three colonies when they began to rear brood smelled so foul that the odor was very noticeable in the immediate vicinity of the hives. I sent a sample to Dr. E. F. Phillips, of Washington, and word was received back that European foulbrood was the cause.

As most of the neighboring bees had already died of the disease, and I had invested a considerable amount in my bees, I decided to keep the bees and see if I could cure the disease. I talked with Mr. Seamans, at Factoryville, Pa., who, in an article in Gleanings in Bee Culture some time before, had attributed the disease to the queen, and was requeening his bees. I also read everything at hand on the subject and started my experiments in effecting the cure by Mr. Seaman's methods, requeening two of the three colonies with 3-banded Italians; result, no improvement. I next tried the method of making them queenless for 30 days and giving an Italian queen at the end of that time. Again the disease recurred. In July the worst colony of the three, a colony of blacks, cast a swarm, and in my absence my father hived the swarm in a hive-body full of combs I had in the cellar from a colony which had died in the spring of foulbrood. They contained dead larvæ, a very little honey, and were the oldest combs I had at that time. Imagine a more hopeless prospect! But something happened. The weather for four days was wet and stormy, and no new honey was brought in. The colony apparently used up all the honey they had brought with them and every cell that was in the hive, and, besides that, cleaned out the old combs until they fairly shone. I watched the result anxiously. No disease appeared in that hive. My faith in the diseased queen theory received a serious setback.

FIG. 57.—BURDOCK

Acting now on the theory that diseased honey was the cause of the disease, I took frames of brood from my one healthy colony and started three nuclei which I placed on the other three stands. Over one of them I placed an excluder and the three bodies of diseased brood. This colony had a young 3-band Italian queen, and I soon had a rousing colony there, which cleaned up the combs and nearly filled them with honey during the late clover and basswood season.

The frames of brood below were carefully watched, but no disease was found during the honey flow. At the end of the basswood season there were several days during which little nectar came in, and in a week I had a well developed case of foulbrood beneath the excluder, which I reasoned must have come about from honey carried down. A few cells of foulbrood also appeared in the two other nuclei at this time, but as colonies of bees were dying all about me from the disease I thought little of that, and concluded that if I were to cure the disease I must have a more resistant strain of bees. The breeders of yellow Italian stock made the greatest claims in this respect, and I accordingly secured queens of these bees from some southern breeders.

Again I put all diseased combs above an excluder on one hive, and put my bodies of honey, which had been above the excluder before, in the honey room and tried again. No disease appeared except below the excluder after a series of stormy days, and in about three weeks I removed my combs from above the excluder and left the bees to build up and store for winter. I kept watch of the brood, however, going over it about once a week. Twice I found one or two diseased larvæ, and I placed these combs at the side of the hive body away from the other brood, first removing the contents of the diseased cell, taking a frame or two at a time from each as they could be spared and feeding a little sugar syrup when the honey flow stopped for the year.

I went into winter with nine 6-frame colonies in fair condition with no apparent signs of foulbrood. Seven of these wintered and I began to feel better. Three of the seven showed a few cells of the disease during the early part of the season, but I raised these combs above the excluders and gave them no further concern until extracting time. I have had no signs of the disease since, in that apiary, though I was not satisfied with the business end of my yellow bees, until I substituted my southern stock with southern-bred yellow bees, of which I can speak only in glowing terms. This yard which I previously had as a home yard is now an outapiary some 30 miles away.

Wishing to test out my previous experiences more fully, I purchased a diseased colony and taking it home where I could watch it, put it with four other colonies of bees, one black, one yellow and two 3-band. None of the other colonies acquired the disease up to July 1, but as the diseased colony was getting in bad shape, owing to the progress of the disease, I put the old queen together with two clean frames of brood from other hives on the old stand, and set the diseased colony to one side. Ten days later I again moved the diseased colony to one side and put a nucleus with a yellow queen on that stand. Then as soon as the young queen hatched, taking four empty combs *from the diseased colony*, I placed them *in the diseased hive body* and shook the bees (blacks) with their virgin queen upon them.

The first of these three swarms which I formed from the diseased colony, and which has had the queen from the hive when it was so badly diseased, is perfectly healthy, but I have just replaced that queen with a yellow one. It is a good colony and will go into winter in good shape. The second is also healthy, but probably will be still weak by fall, and require a little feed to carry it over. The third is now a fair 4-frame nucleus, and I will join it with some other colony later.

From these experiences I deduct that, with me, the bees apparently do not carry it on their feet, for it will be noticed that I have had conditions where all of the field bees from badly affected colonies have gone to a clean nucleus without carrying the disease to it.

It does not seem to be a disease of the queen, for I have repeatedly placed such queens on clean combs with no recurrence that could not be accounted for by diseased honey. I have nearly all the combs from my original 15 diseased colonies with only healthy brood in at this time, hence I cannot believe that it is dangerous to use these combs if properly cared for.

My method now is this: I place all diseased combs over an excluder for about 24 days. All brood will hatch and diseased cells be cleaned out in that time. Then I remove the diseased frames, extract and pile them where the bees cannot get to them until brood rearing stops in the fall. I then wet them thoroughly and place them over some colony or colonies above a honey-board without an excluder. After three or four days when it is convenient I take off these combs and store them with the others, the little diseased honey which had been left by the excluder will be taken to the center of the brood-nest where it will be immediately used by the mature bees without injury to them, and the cells which contained it will be thoroughly cleaned so that there is no danger of their holding the germs of the disease.

As to how it is spread from hive to hive I can only surmise as others do. My theory is this: A loaded bee often enters the wrong hive. If the bee is quite young it will stay; if it is old it will load up an additional load of honey and depart for home, to return as a robber bee to meet a robber's fate. If it happens to have carried away honey from a diseased cell the trick is done, the honey is fed to several larvæ and the disease is established.

As to Dr. Miller's theory that the disease is spread in the hive by the nurse bees sucking the juices from larvæ dead of the disease and feeding to other larvæ, I regard it as remotely possible but not probable. I have watched this disease most carefully, and I have seen nothing to bear out such a theory. If that were the case I would expect it to spread with much greater rapidity in a hive, and when more than half the brood was dying of the disease the health of the remaining brood would be unaccountable. With me a diseased colony will last for two or three years; the progress of the disease is at first very slow, and the colony becomes seriously weak only a comparatively short time before it dies or is robbed out. Then the additional fact that, due to the heat of the hive and the delicateness of the larval tissues, putrefaction sets in almost immediately after, if not before, the larva is dead, and that the shrinkage of the dead larva is only what we might expect of evaporation at that temperature, would seem to me to preclude such a possibility.

Another season I expect to experiment further with the disease, introducing to nuclei queens from the worst diseased colonies I can find, only being certain that I do not bring *any* of the American variety to my yards, and giving the diseased queen theory a final tryout, being confident from past experience as to the result.

Having studied and worked for four years with bees having this disease, I simply wish to place in your hands the results of my limited experiments.

Kingsley, Pa.

The Life of a Bee Inspector—Some of the Fun

BY F. DUNDAS TODD.

MAYBE my readers think that it is a very serious thing to be a foulbrood inspector, but I want to assure them that there is a humorous side to the occupation, and that I manage to get a little fun out of it nearly every day. As in all other walks of life, the morsels are so small that they are hardly worth passing on, even if they brought a good healthy grin at the moment. On the other hand, some of them were so big that their memory lingers, and brings a smile whenever they jump into recollection. Let me tell some of these experiences in the hope that even in tamer form they may raise a smile on the face of my readers.

Working a district so thoroughly as I do, I come to learn all the regular wayfarers on the roads, so have a hailing acquaintance with the butcher, the baker, the grocery-man and such like. One day I noticed the butcher's cart driven by a well dressed stranger, and soon observed that he stopped quite a little while at every farm house along the road. My jumps were frequently over distances of 2 and 3 miles, but each time I got on the main road there he was. Having no other occupation I began to wonder what he was doing, but I suspected he was peddling something.

About 3 o'clock in the afternoon I landed at the far end of the road, right at the foot of the mountain and decided I had lost track of the stranger. When I tackled the farmer's apiary I found it located in a rather neglected orchard, alongside the fence and with grass so high in front of the two hives that we actually had to search for them. The owner informed me that the bees were so vicious that he had been forced to remove them to a considerable distance from the house, say about 200 yards. In those days I was rather ignorant of farmers and their ways of doing things, so without realizing the possible consequences I suggested that he ought to cut the grass, picturing to myself that he would use a reaping hook or clippers gently, as I would myself. I turned my attention to preparing the veils for himself, assistants and family, so did not observe his movements until I heard a loud thud. On glancing up I saw him in the act of swinging his scythe, and before I could open my mouth there was a second thud, even louder than the first. The grass was gone from the hives all right, but in an instant the air was alive with thousands of the most vicious little fiends I had met up to that moment.

I was there to work, so I sailed right in. The supers, innocent of sections, had been on the hives for years and were full of beautiful honey, so I got hold of a couple of dish-pans and replevined the lot. In the brood-chamber the combs were mostly cross-built so I had a rather slow task. Long before I got to the end of it, everybody but the farmer had bolted, and when I got to the house I found several thousand angry bees on the rampage, the honey being of course a source of attraction. Dogs and cats had bolted for shelter, while the chickens were behaving as if possessed of evil spirits. I had gotten to the end of my day's circuit, so I did not worry. I decided to postpone the yoking of my horse for awhile so as to give the bees a chance

GOLDEN EARS FROM HATZIC, B. C.
Photographed from the apiary of J. R. Morrison by F. Dundas Todd

to quiet down. I called for some cream and proceeded to put everybody in good humor by serving a dish of honey and cream. There were just seven daughters in the family, so I had a splendid time.

At the height of the hilarity the mysterious man in the butcher's cart hove in sight, then hitched up his horse to the post at the gate, which was at least 50 yards from the house. Then he swiftly advanced to the door carrying a few books in his hand. Guessing what was likely to happen I jumped to my feet to give him warning, but at that instant he suddenly stopped, whipped off his straw hat, and frantically fanned the air in all directions. Then he rushed towards the house, but at this moment his horse commenced to plunge and kick, so he reversed his engines and raced back to his worried steed. All we saw for a moment was a streak, above which something white was waving vigorously. I wish I could describe the unhitching. All we saw was a jumble of horse's head, heels, and a straw hat. How he managed to untie the rope and keep the hat going at the same time is more than I can understand. As the rope was set free the horse started, the book agent tumbled into the cart; then we had the finest imitation of a horse race my eyes have ever witnessed. He held the hat and whip in his right hand. and plied them both unceasingly and unnecessarily. At the upward lift of the whip he waved the hat around his head, on the downward stroke he hit the horse. Crouched like a jockey, he yelled to encourage his horse which to my way of thinking had incentive enough. We watched him cover a mile in awfully fast time, and then he vanished from our sight. Afterwards I learned he was peddling Pastor Russell's books on the millenium, but he departed from the district the same night. Moral: To get rid of book agents, let loose a colony of vicious bees.

My own getaway was hardly so exciting, but the bees followed me for nearly a mile.

I know that certain colonies of bees are vicious all the time, but on the other hand I have yet to learn why some are occasionally so. Sometimes I have wondered if the material used in the smoker made any difference. I pick up what I can get as I go along, and so have used cedar bark, sacking, both new and rotten, old dresses, and even old shirts, but I must confess I cannot see much difference. Again and again I thought I had found something definite, but at the very next apiary my theory would be upset. But speaking of old shirts reminds me of an experience, the recital of which always brings a chuckle of satisfaction to the most serious minded femininity.

One day while I was overhauling an apiary belonging to an old bachelor, rather noted for his dirty habits, I ran short of ammunition for the smoker, and on asking for some he handed me one of his old shirts, which in many ways was rather remarkable. The next apiary was less than a quarter of a mile away, so without taking off my bee regalia, I cut across the fields to the house. Setting the live smoker on the front porch, I rang the doorbell. When the lady of the house appeared I explained my errand. She listened quietly until I had finished, then casting her eyes to the smoker she asked, "What do you burn in that thing?" "At the present moment I am burning one of John Smith's old shirts," I meekly answered. "No wonder it smells," came the crushing comment.

I have told the above tale many times, but never to John Smith.

Once I thought I was a hoodoo. It came about in this fashion. One day I visited an apiary consisting of only one hive, but the farmer was away. His better half, a finely educated and interesting woman, was very anxious to see the inside of the hive, and of course I was equally willing that she should. She had two children, one a baby, the other a boy about 5 years old. Of course, I advised that both should be kept in the house. We had just started to work when the boy broke forth into a loud yell, and on looking around we saw him in the middle of the road cutting up many kinds of antics. The mother rushed to his aid, and I went on with my work. Soon she called to me that a bee was in the boy's nose and she could not get it out. I got both into the house, but just as soon as I began operations the boy gave one big, healthy sneeze and ejected the invader, who, by the way, had never attempted to sting.

Back we went to work, but soon the boy was yelling again. Once more he had broken bounds, and this time two bees had stung him.

Two months afterwards as I came to the gate to see how the farmer was making out. I heard a lusty yell from the same boy, next an anxious enquiry in the mother's voice, then "a wasp stung me" in a wailing tone from the child. I decided this was no place for a nervous man, that may be the mother

BEE DEMONSTRATIONS BY F. DUNDAS TODD. NORTH VANCOUVER—APIARY OF GEORGE DENNIS might associate the beeman and stings, and so lay the blame on him. So I got out while the getting was good. Afterwards I learned she was very sorry I passed on as she wanted to have a talk with me about the bees. You just never can tell.

For pure unmitigated wickedness and cussedness the bees in the north part of Vancouver Island beat anything I ever came across. I took the trouble to trace the genealogy of the pesky creatures, and found they went back to the same apiary.

One of the fiercest collections I ever met belonged to a young lady on one of the small islands. I found her scared of them, and tried to jolly her into the possession of a little confidence, but within three minutes of starting to inspect her apiary I urged her to get into the house.

But the real fun began when I got to her brother's apiary. I was pushed for time, as I wanted to catch the noonday boat, so he drove me over to his yard in a little buggy. He hitched the horse at the gate of the 3-acre paddock, and laughed at my objections. When we got to the third hive I heard a crash, and felt sure the horse was in trouble. The beekeeper left me on the run, and did not return for nearly a quarter of an hour. Then he explained that the shaft of the rig had ripped out 15 pickets of the fence while the horse was protesting against the bee stings.

About this time the steamer arrived so I got on board. Next day I happened to be a passenger on the steamer when she came to the same pier. Leaning over the ship's side I asked him how bees did on the island. He glanced up, apparently recognized me, and at once invited me to come on shore. I regretted my inability to oblige, as I was urgently needed elsewhere. But he assured me I could get no warmer reception anywhere than I would get right there. Then he told me that after I left not a soul had dared appear in the streets of the village. The women folks had been forced to stay in the grocery store all day, while the men had been driven to the hotel bar to seek liquid antidote for the stings they might get. Even the score of dogs that generally basked all day long in the sun had been forced to take shelter in the sheds on the wharf.

I could also tell a tale of a Methodist deacon, who searching his soul for sounds to voice his woes, used language that apparently brought great joy to the heart of a French-Canadian neighbor, but would certainly lower his standing with his own church members.

It was past 6 o'clock when I was through with his apiary, but the bees followed us into the house. This was a new experience to me, so I closed the door of the room which faced the north and was shaded by trees. To my astonishment the bees came scouting around until they found the open window, then darted at us in the rear of the room. They certainly were the most pugnacious wretches I have met in my wanderings.

Victoria, B. C.

How Does European Foulbrood Spread ?

BY J. E. CRANE.

FEW things have interested me more than the first page of the American Bee Journal for September and the editorial comments on it, as to the spread of European foulbrood. I have given the subject a good deal of thought and had come to the conclusion that some of the commonly accepted views, that it was largely spread by bees robbing diseased colonies, would not account for the rapid spread of this disease. Indeed, I had come to doubt if it was carried by honey at all. I have many times come across it in inspection work, but have not had a chance to study it very closely until the present season.

Last year it appeared in one of our outyards, and the past spring the yard was broken up and the weaker stock brought home and transferred to other yards, where the disease again showed itself. There has been, to me, something mysterious about the spread of it. Does it go through the air ? Does the wind waft the spores or bacteria from hive to hive or from yard to yard ? Do the bees carry the germs to the flowers, to be picked up by other bees from healthy colonies and carried to their hives to work destruction ?

One thing I have observed in inspecting is that where I found this particular disease, I was apt to find one or more colonies in the later stages of disease, in fact, nearly gone, and then a number of colonies in the earlier stages of disease. I have sometimes likened these conditions to a hen with a brood of chickens. I have never had a single case of European foulbrood in my home yard until this season. But in every instance with one or two exceptions it has come to hives setting beside hives brought in from away that had first come down with this disease. We came to the conclusion that it came from giving combs from a diseased colony not knowing it to be diseased.

Another illustration: I found one farmer trying to increase his stock of bees. Among them I suspected one colony of being diseased, but not altogether sure. He put his bees into his cellar to winter. I wrote him during the winter, that when he took them out, to set this particular hive by itself, until I could again examine it. Instead he set his hives out in two rows facing south, and this hive in the north row, with the result that when later I examined them I found not only this hive badly diseased, but also one by its side and two directly in front of it. So many facts of this sort have come to me that I had come to believe that one most potent factor in the rapid spread of European foulbrood was the drifting of nursing bees from diseased to healthy colonies.

It is quite significant that Dr. Miller should have found disease in hive No. 93 June 22 to be followed July 1 in No. 94 and July 21 in No. 95 in regular order. That disease germs in the honey is not the main cause of the spread of this disease seems evident, as a colony may be badly diseased, but if of good strength we may remove the queen for two or three weeks and give them another, when they will remain healthy although they are using from the same honey that was used three weeks before when so much brood was dying.

There are some knotty problems connected with this whole subject. If the unsealed brood is removed during the summer and the cells polished and the disease disappears, why should not the absence of brood from the cells during four months of winter answer the same purpose ? Is it because the queen carries the germs of disease within her ? It looks that way. And yet when the disease first makes its appearance if we cage her for ten days or two weeks and then liberate her the disease may not reappear. Is it because she has not become inoculated with bacteria ? It looks that way. But when she has been in a diseased hive for some time she becomes so saturated with bacteria, as you might say, that they enter the eggs which later cause the death of the young larvæ. It would seem so.

Again, where bees are wintered in the cellar and taken out after brood has been started, drifting bees may

HOME AND APIARY OF TOFIELD LEHMAN, OF ELGIN, IOWA

VIEW OF MT. CHEAM AND FRASER RIVER, FROM THE APIARY OF SAM SMITH, DEWDNEY, B. C.
This is a typical specimen of British Columbia. We have thousands more just as good.—(Photographed by F. Dundas Todd.)

cause disease by entering colonies that were healthy before. The transfer of combs from diseased to healthy hives is often a fruitful source or cause of the spread of this disease. It is quite rare to find a farmer beekeeper, or one who does not make a special business of it, who will recognize disease of any kind among his bees.

The rearing of queens in diseased colonies is doubtless another cause of the spread of this disease. A friend of mine who has had a large experience with European foulbrood, says it is impossible to rear healthy or disease-resisting queens in such colonies, as they will produce only queens whose progeny cannot resist this disease.

But how does this disease spread from yard to yard? Surely not by drifting, you say. But are we sure? I certainly am not. Why should not a young nursing bee with its stomach full of pollen, water, and honey, with many bacteria, as it takes its first flight, lose its way and wander as it hears the hum of many bees, to some yard where disease was before unknown, and enter a hive and be well received for the load it brings of food now digested and ready to feed the hungry larvæ? "Impossible!" you say, "they always know their way back. Their instinct or sense of direction teaches them that." Alas! their instincts are sometimes at fault. Instinct teaches the larvæ as they reach maturity to enter the pupa state with their heads to the mouth of the cells, yet I have found them with their heads towards the base of the cell, and unable to get out without assistance.

Again, we have found bees trying to rear two larvæ in one cell and queens from drone-larvæ. No, surely, their instincts are not perfect, and I can conceive of a bee wandering far from its home to some strange hive. Presumably, however, this disease is more commonly carried from yard to yard by robber bees than otherwise, whether in the honey or on their bodies, who can tell? I have sometimes thought it was neither, but by nurse bees that followed the robbers to their home and cast in their lot with them. Of one thing, however, I feel very sure, and that is if you have European foulbrood in your yard and wish to keep it from spreading you must get rid of what you have at the earliest moment, either by caging or removing the queen from such hives, or moving them at least 4 or 5 miles from home until cured or by destroying them with their combs and honey. The last is a very sure remedy.

Perhaps I should mention another method of the distribution of European foulbrood, although it may combine all that have been mentioned. I believe, more often than we think, this disease is spread through or by the agency of wild bees.

A few weeks ago I was called to examine a yard some 50 miles from home. I found it nearly gone with this disease, and the moths taking possession. Not one good colony remained. I went to all the yards in the vicinity expecting to find other cases, but not one did I find. In talking with the owner I found that he was an old bee hunter, finding and cutting trees long distances from home, bringing home his honey and sometimes the bees with him, which was undoubtedly the way the disease came to appear in his yard. Instances might be multiplied where it has seemed very certain the disease came from wild bees.

Middlebury, Vt.

Does the Queen Convey European Foulbrood?—Is Cheshire Good Authority on This Subject?

BY OREL L. HERSHISER.

THE leading editorial of the September, 1915, issue of the American Bee Journal, by Dr. C. C. Miller and C. P. Dadant, has inspired the writer to a little investigation and the offering of a few remarks on the above important subject.

That the disease of European foulbrood is spread by the nurse bees feeding the juices of dead larvæ, before it becomes putrid, to healthy larvæ, the writer believes to be quite probable, and this seems equally true whether such juices are used purposely for food for the larvæ or whether the food of the nurse bees may become contaminated during the process of removing the dead larvæ.

The stronger flavored honeys, such as that from buckwheat, seem to excite bees to robbing more than do the milder flavored sorts, such as clover. In like manner may not the peculiar sour odor of European foulbrood, before it becomes putrid, or even afterwards, be strongly attractive to bees causing silent robbing amongst the colonies of the apiary and of neighboring apiaries over a radius of several miles? I offer this theory in explanation of the almost simultaneous appearance of the disease in so many colonies of the apiary and in neighboring apiaries. This theory is strengthened by my observations that, as a rule, the stronger colonies are the first to become infected, and the weaker ones—those with comparatively few field workers—are usually the last to take the disease. If this silent robbing theory is correct, it offers one explanation why adjacent colonies, or those near each other, are usually found to be infected rather than a uniform distribution of infected colonies throughout the apiary.

There is far more mixing of bees of an apiary, or of neighboring apiaries, by bees gaining entrance and being allowed in colonies other than their own than is generally supposed. Also it is well known that the disease flourishes best in the early spring or later when there is a dearth of honey from natural sources, which fact also strengthens the above theory; since, when nectar is plentiful the bees immediately discontinue robbing, yield more readily to treatment and abatement of the disease is plainly noticeable.

As to the infection being in the honey: In an experiment by the writer, in which an unusually strong colony, badly affected with the disease, had stored and capped a super full of clover honey before treatment, the honey was saved and used in the "fall treatment" of two colonies; that is, the colonies were placed on these combs of honey for wintering. They did not take the disease. But still I am not so sure the honey was not diseased since good Italian stock, such as were these colonies, are quite able to keep the disease cleaned out. When it comes to honey being stored in which diseased larvæ have recently died, or where the same have not been thoroughly cleaned out, as is likely to happen when a heavy honey flow is causing a rapid contraction of the broodnest, I would suspect such honey to be contaminated. I doubt if any one who has had much experience with the disease would advise allowing the bees to rob out the combs of diseased colonies that contain only dry diseased larva and none fresh enough to be juicy.

Mr. Dadant offers as proof that "European foulbrood is usually transmitted by the queen," the statement quoted from Cheshire to the effect that upon the dissection of a queen bacilli were found in both the ovarian tube and the half developed egg. Also he offers the experiment of M. G. Dadant, where 51 colonies were treated for European foulbrood, and in three cases queens from infected colonies were introduced to weak uninfected colonies all of which contracted the disease.

As to the latter of these proofs. If the results of Mr. Dadant's experiment is to be accepted, then the theory of what has been supposed to be an effective treatment of the disease falls flat. That theory, as is well known, is to deprive the bees of all infectious food for the larvæ by the best means possible or practicable. This is accomplished by shaking or brushing, *a la* McEvoy, with two shakes, or, according to some other authorities, with but one shake, or by caging the queen a number of days, *a la* Miller, or by keeping the colony queenless 20 days, then giving a ripe queen-cell from good Italian stock, *a la* Alexander and other methods practiced by other apiarists.

Now if the disease is inherent in the queen, what is to be accomplished by these methods (except, of course, the Alexander method which contemplates a new queen)? *Nothing*. With 51 diseased colonies in an apiary it may be suggested that there could be no definite assurance that these three were not infected before the queens were introduced, as some time, perhaps several days, may elapse after infection before the same is discoverable by the unaided eye, even though they were weak and less likely to bring the infection from without than stronger colonies. May not bees from other colonies have entered the hives and brought the infection? I have noticed more than once that black colonies of bees will become diseased after the most thorough treatment, but have always attributed it to reinfection from outside sources or to the propensity of black bees to harbor the disease.

On the other hand I have treated many colonies of Italians and hybrids, and the cure remained permanent. Moreover, good Italian stock, when badly infected, will yield readily to treatment and remain cured which, it seems to me, would not be the case if the disease was inherent in the queen. It may be said that not all Italian stock are highly resistant. I have occasionally had a recurrence of the disease in colonies of what otherwise appeared to be the best of Italian stock.

In May, 1912, the United States Department of Agriculture issued circular No. 157, entitled, "The Cause of European Foulbrood," by G. F. White, M.D., Ph. D., Expert in Bacteriology. In this work it is shown that *Bacillus alvei*, when isolated from diseased brood, and pure cultures of the same were fed to colonies of healthy bees, foulbrood was not produced in any instance. Also it is shown, by a process of elimination, that *Bacillus pluton* is the organism that causes European foulbrood. Also it was proved by Dr. White, in 1907, that *Bacillus larvæ* is the cause of American foulbrood. Assuming the findings of Dr. White to be true—and I have not the least doubt of their truth—the presence of *Bacillus alvei* in the ovarian tube of the queen and in the half developed egg, as shown by Cheshire, would be no proof that the disease of European foulbrood was inherent in the queen.

Permit me to quote from a paper by Dr. E. F, Phillips, Ph. D., Washington, D. C., In Charge of Apiculture for the United States Department of Agriculture, published in the Annual Report of the Beekeepers' Association of the Province of Ontario, 1911, page 36.

"Early in 1884, Cheshire was invited by the British Beekeepers' Association, to read a paper on "foulbrood," although he had not previously interested himself on this subject. About two months after his work was instituted, there began to appear articles in the British Bee Journal, in which he claimed to have made great discoveries concerning the disease. In August of that year he took a single piece of comb to a bacteriologist, Mr. Cheyne, from which an organism was isolated and described, and to which Mr. Cheshire's name, *Bacillus alvei*, was given. Cheshire came to deny the existence of two brood diseases, although they had been previously differentiated, and attributed all infectious troubles of the brood to this organism. That he mixed the two diseases in his description seems certain, and there can be little reasonable doubt that the sample taken to Mr. Cheyne was what we now call European foulbrood.

"Following these papers it was commonly accepted among beekeepers that 'foulbrood' is caused by *Bacillus alvei*, but the name 'foulbrood' was most commonly applied by beekeepers to the disease now called American foulbrood. American beekeepers were strengthened in this erroneous view by the statements of Cowan, who, on examining a sample of dead brood in the United States, pronounced it to be the same as the 'foulbrood' of England, and stated that he found *Bacillus alvei* present. The examination made was obviously entirely inadequate, and the conclusion that *Bacillus alvei* is the cause of the trouble was entirely unwarranted. Since *Bacillus alvei* had never been shown to be the cause of any disease, we may omit discussion of those papers in which further studies of *Bacillus alvei* were made."

In view of the better facilities for research work than obtained for the use of investigators earlier in the field; the exhaustive researches of Dr. White, extending over years of time; his scientifically correct methods of investigating the causes of these diseases, as shown in the circular above mentioned, the conclusion seems inevitable that Cheshire made a mistake as to the effect of *Bacillus alvei* on the brood and queen; that his findings on this subject cannot be accepted as authority, and that the utmost faith may be placed on the conclusions of Dr. White.

Kenmore, N. Y.

Was Beet Sugar the Trouble?

BY FREDERICK GRIFFITH.

MR. J. A. HEBERLE, B. S., in the October number of the Bee Journal, presented an able discussion on this question, contending that beet sugar has been found by experience, in Germany, to be of equal value for feeding to cane sugar. In California, apiarists will not use beet sugar, claiming that it kills their bees.

In 1914, the writer gave his parents a strong colony with scant stores, with directions to feed them. Every week or so following would find a carpet of the poor dead creatures in front of the hive, many still quivering in the throes of death, on the pile, every time we looked at them At first we thought they were dead robber bees, but soon found that the colony was fast dwindling. We thought we knew all about bees, and began to study their malady, but were entirely baffled.

Presently an old lady from California asked what we were feeding the bees, and upon being told beet sugar, she told us that in California they had found beet sugar killed bees. Immediately we changed to cane sugar, and thenceforth those bees began to thrive, and rebuilt up to a fine, strong colony.

I am wondering if Dr. Phillips, Uncle Sam's beeman, has any information on this question?

Kansas City, Mo.

Some Public Misstatements

BY A. F. BONNEY.

Answer to the "Pathfinder."

"PLEASE give a brief discussion of honey and tell from what sources it is derived. ANS. This food product which is deposited by bees in the honey-comb is a sweet, thick liquid. It is clear and transparent, but when kept for some time it solidifies into a granular white mass. The sweet juices of flowers are collected by neuter bees and deposited in their honey-bags where they undergo certain chemical changes which convert them into honey.

"Honey produced by young bees is called 'virgin honey.' Older bees produce honey that is more or less yellow in color. The flavor of honey depends largely on the plants from which it is obtained. Clover and other plants are often cultivated near big apiaries to serve as bee food. Clover is a favorite for this purpose because honey made from its blossoms is almost pure white and the flavor is excellent. Honey is a valuable article of food and also has a medicinal value. Honey is sometimes produced artificially from glucose."—*Pathfinder*.

EDITOR OF PATHFINDER,
Washington, D. C.

Dear Sir:—I know you will pardon me when I call your attention to some misstatements in the above quotation from your issue of July 1.

"Honey produced by young bees" is not whiter than that deposited by older bees, and the term "virgin honey" is as obsolete as is pounding tin pans to make a swarm come to the ground. The color of honey depends entirely upon its origin. That from white clover, basswood, sweet clover and some other plants is "white;" that is, almost colorless, while that from heartsease is "amber" colored, and the honey from buckwheat is very dark. The flavor of honey depends entirely upon its origin, and experts in honey can form a very close idea as to the source from sample offered.

I know of no case where plants have been raised solely as a honey supply, save only sweet clover, which beekeepers have put into waste places until there is a great deal of it. In this part of the country not much surplus is secured from it, but it is a source of honey after the white clover ceases to yield.

If you will take the United States Dispensatory for it, honey has no medicinal value. Formerly it was used a great deal in making "pill mass," but in 30 years experience as a druggist, I have never had occasion to dispense it as a medicine.

"Honey is sometimes produced artificially from glucose." Pardon me, but that is awfully funny. Honey is glucose, *pure*, while the glucose you probably allude to, corn syrup, is made by treating starch with dilute sulphuric acid. This murderous chemical compound was formerly used to adulterate honey, but since the passage of the pure food laws there is but little if anything of the kind on the market.

Buck Grove, Iowa.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Miscellaneous Questions

1. From one source I have it that in the early part of the season, when hives are full of bees, in adding a full-depth super, it makes no difference whether it is placed above or below. Another advocates putting it always below, especially in case of comb honey supers having already been put upon the original hive, and claims that this alone prevents swarming in about half the cases.

2. In a few of my colonies a day or two ago, I noticed three or four queen-cells open at one end, showing normal exit of queen, and, besides, as many queen-cells still closed. Do you think that there was a swarm for every open queen-cell except one?

3. In one case I caught the swarm as it was emerging, and was about to put it on the old stand, when I noticed such a state of affairs as just depicted, and then I also saw (in the parent hive) a queen light in body. She skipped on the other side of the frame and then flew off. Was this her mating flight? Thinking so, I did not change the position of the hive, as the queen, on returning, probably would have gone into the wrong hive. What do you think of this? KENTUCKY.

ANSWERS.—1. Putting an empty story under the body, with sections over brood, would hardly work satisfactorily, for the bees would be likely to do little or nothing in the sections until both stories below were filled. For extracted honey it would be a different story. Indeed, it is exactly the Demaree plan to prevent swarming, provided an excluder is put between the two stories, the queen being in the empty story below the excluder.

2. It is possible that a swarm had issued for each but one vacated cell, but it is more likely that no swarm had issued with a virgin, but that a royal battle had occurred, with only one survivor.

3. It may have been her mating flight, but more likely it was a flight from fright.

A Sulking Swarm

I had a swarm that alighted near the top of a tall walnut tree, then very strangely, for the queen's wings were not clipped, the swarm returned. This swarm had a tremendous lot of bees. On examining the hive I found lots of queen-cells, and I put all but two or three of the frames containing queen cells into another hive-body. Before I set this aside I placed it on top of the parent hive with an excluder between. In about an hour I set this aside of the parent hive and placed on the latter two supers so as to afford plenty of room. The swarm is in the cell-less hive. Now, in spite of two days of rain lots of the bees insist upon hanging outside at the entrance and on the front wall. How would you manage this situation? PENNSYLVANIA.

ANSWER.—I suppose you mean to ask how I would manage so that that swarm would go to work instead of sulking. The frames with lots of queen-cells you put in another hive, and presumably you set this on a new stand with enough bees to care for the brood. The main point is that you left with that very strong swarm all frames that had no queen-cells on them. If there were any considerable number of them, that would mean a good deal of brood, making the bees feel, if you will allow the expression, as if they had not yet swarmed. The management I would suggest would be to take away all but one of those frames of brood, possibly returning them a week or ten days later. That might suggest to them that the swarming business was all attended to, and it was up to them to go to work.

Dark Honey—Ventilation

I am mailing you a small package of dark amber honey, which our bees are gathering. We have white sweet clover and goldenrod near at hand.

1. I am very desirous to know from what source this dark rank honey is obtained and if it may with safety be used for winter feed. It is a delicious article after raising its temperature to about 180 degrees Fahr. for one-half or three-fourths hour.

2. What do you think of ventilation at the top of a hive in winter? Is it important, and if so would it not be proper to cut a 2-inch hole through a quilt and place the cloth cushions filled with cork chips on top of this? I use table oilcloth for quilts in summer and winter. Is there anything better? INDIANA.

ANSWERS.—1. I am sorry to say that I am a poor judge as to different kinds of honey. My guess would be that this is a mixture of different honeys, possibly of all the kinds you mention. You do not mention asters. Some have found aster very bad for winter; and if you do not have considerable of that kind of honey I should not feel very anxious as to the other honeys you mention for winter stores.

2. There is a decided difference of opinion as to the matter of upward ventilation in winter; some reporting success with sealed covering, others reporting disaster. In either case it is important to have warm covering overhead for outdoor wintering. You may be on the safer side not to have all sealed tight, and the plan you propose may work all right. I used oilcloth, same as you for years, but for many years past have had no covering over brood-frames except the hive cover, and this method I like better. But it must be remembered that I winter in cellar.

Probably a Fake

The enclosed clipping is from the Southern Ruralist for Aug. 15. What does the man mean? I do not understand at all. It seems to me he must be crazy. I thought the pure food law forbade the use of sugar in such a way. TENNESSEE.

ANSWER.—Among other things, the clipping contains the following:

"I will now proceed to explain my experiments with 'sugar syrup' feeding, to produce nice section or box honey, even in seasons when the natural honey and flowers fail......... Last season, when our honey flow was a total failure, I had gas run into my bee-house, made 25 special feeders to go on top of supers, bought 2400 'pounds of granulated white sugar, made syrup in my bee-house by the 25 gallons at a time, and let it cool. Gave the bees a quart morning and evening until the sugar was used up; that is, the 2400 pounds at $4.70 per hundred. War came on and sugar got too high for me to tackle, and this amount of sugar cleaned up all supers I had on the hives. Well, I had left three unfinished sections. I had 1200 pounds of section honey in 1-pound sections."

One is a little at a loss to know whether the writer of the foregoing, an Ohio beekeeper whose name it may be a kindness to withhold, is crazy, as suggested by "Tennessee," or merely ignorant. The fact that numbers came out so even, exactly one pound of honey for every two pounds of sugar, gives a hint that the whole thing might be a romantic dream. But the editor of a reputable publication should hardly give credit to such an affair by putting it in print.

Apparently the proceeding was a profitable affair at $4.70 per hundred, but ceased to be profitable at a little higher price. It is pretty clear then that the profit was not so very great at the $4.70. Certainly no amount of profit would induce an honest man with a reasonable amount of intelligence to do such a low-down thing as to sell sugar syrup for honey, even if he could escape the clutches of the law. Let us hope that Ohio authorities may dissuade this brother from this course and that the editor of the Southern Ruralist may be more discriminating hereafter as to the matter he publishes.

ANOTHER VIEW OF THE O'DONNELL APIARY

Unfinished Sections—Golden Bees

1. I have a lot of boxes of honey with bees this year's swarms, which I want to feed back to some of the hives. My hives are the Woodman make. After the bees are killed in the box could I take the cover off from the hive and supers and place the box on top of the supers by making it tight all around? Would the bees carry the honey down and put it in the supers, and if so could the box be left on the hive day and night, or would outside bees find it and get to robbing? Would F. Greiner's way given in the Bee Journal be the best? He speaks of a bridge passage from one to the other with a box in front or behind the hive. If I should do it that way would it be necessary to take the box away every day?

2. Please tell me what kind of bees you like best for honey gathering, 3-banded or golden Italians?

3. The bees that have done the best for me this summer are the ones that I gave a

M. J. O'DONNELL APIARY IN NORTHERN LATITUDES, LOCATED NEAR HARLEYBURY, ONT.
White clover, willow herb, raspberries and dandelions are the principal honey sources

golden queen to last fall. Perhaps they got crossed with some of my drones after they came here, for they don't seem to be as golden as they should be; but they are working later at night and earlier in the morning, and finish up the sections better than the others. Are they any better? Is it because they are perhaps crossed just right, or is it all a happen so?

4. Why do we have to pay more for a golden queen than we do for any other kind? NEW YORK.

ANSWERS.—1. I don't believe the bees will carry out your scheme at all. At least I never could get them to do so for me.

2. Like most beekeepers, I prefer the 3-banded.

3. There would be no change in the bees so long as the same queen remained; but it is quite possible that the original queen has been superseded and the new queen has met your drones. Evidently the new stock is better than your old stock, but without trying them side by side you can hardly tell whether goldens or 3-banders would do better for you. It may be mentioned, however, that there is quite a variation in the same variety of bees, and from this it happens that some goldens are better than some 3-banders, and at the same time some 3-banders, are better than some goldens.

4. I don't know why, unless because of the general law of supply and demand, which makes an article cost more when it is scarce. I think, however, that generally one can be bought for as little as the other.

Lesser Beemoth

Two or three days ago when looking at a nucleus that had a laying queen, I found several worker bees with their heads sticking out and acting as if they would be out of the cells in a few minutes. Today looking at the same nucleus, I saw the same bees still alive and as yet in their cells.

I got a knife and took them out, being surprised to find their abdomens partly eaten and a white worm about three-fourths inch at the bottom of each cell. There were about a dozen bees so afflicted. Have never before seen this; the bees immediately removed worms and afflicted bees from the nucleus. The frames have been in constant use, being full of brood when placed in nucleus.

What explanation can you give for this? RHODE ISLAND.

ANSWER.—It is the work of the lesser beemoth. It seems to fasten the young bees in their cells, perhaps by a web in the bottom of the cells. The bees wiggle their heads earnestly and constantly, but without the power to get loose. Fortunately their presence is rare, and they do not appear in large numbers. I doubt if I have seen them once in five years, and then on a very small scale.

Damp Cellar

1. My cellar floor is concrete, and is always damp. I am thinking of covering it with 4 inches of dry sawdust. What do you think about it? I wintered 106 colonies in this cellar without a loss in 1914, but the covers and bottoms were very damp in the spring. I gave the bees all the ventilation possible according to the weather, and the temperature stood at about 45 degrees on top and 42 degrees below.

2. The plan I used on swarming in 1914 did not work this year. They swarmed with one frame of brood. Did you have any trouble with the sickness among your bees this year about the middle of July, and if you did what do you call it? My crop this year was a little better than last year, and averaged about 35 pounds of comb honey to the colony and about 65 pounds of extracted.

3. The bottom of my cellar was sandy. How would it do to break five or six holes in the floor and dig a foot or so deep, or take the floor out entirely? WISCONSIN.

ANSWERS.—1. I'm afraid the sawdust will not do a great deal of good. Possibly it might if you should sweep it up and dry it out as fast as it got wet. Lime might do more good.

2. Yes, I had some trouble to keep down swarming, as I do every year, only some years it is worse than others. I didn't call it anything but old-fashioned swarming fever.

3. Likely the sandy floor would be better than the concrete, the difference being in proportion to the amount of the concrete removed. But so long as your bees winter well the dampnesss cannot be such a very bad thing.

A Beginner

1. Is Michigan a good State for honey?

2. How many pounds will a colony here yield per season?

3. Is there any way of keeping a colony over winter when it has not enough honey stored?

4. What kind of bees is best adapted for this State?

5. Name me some of the best bee flowers and where could I get their seed?

6 Could I place a new queen in a queenless colony? MICHIGAN.

ANSWERS.—1. Yes, very good.

2. That varies very greatly, according to the locality, the season, and the beekeeper. The average per colony may be from little or nothing to 100 pounds or more.

3. Yes, it can be fed.

4 Italians are generally considered preferable.

5. White clover, raspberry, basswood, willow herb, etc. Seed can be had of seed dealers, but if you do much at beekeeping you will have to have quite a large radius for pasturage, so you will not think of planting, but will depend on pasturage already to hand.

6. Yes, it is a common thing to introduce a queen into a colony made queenless by design or accident.

It will pay you big to get a good book on beekeeping. A book really comes before a bee journal.

European Foulbrood

I saw in the May number of the Bee Journal the water cure for foulbrood. The Editor said in a foot-note it probably would not work with European foulbrood, as the queen would carry the disease.

1. Now the question is how will she carry the disease?

2. Will the honey of European foulbrood infect other colonies?

3. If the queen is infected will caging cure her; if so, how long must she be caged? MISSOURI.

ANSWERS.—1. I don't know, but I suppose *if* she carries the disease it must be through the eggs she lays.

2, Yes, provided the honey contains germs of the disease, of which there is always danger. Yet I doubt if there is much danger from the honey in the surplus department.

3. I don't know; but if the queen has the disease in her system I doubt the efficacy of caging.

Bitter Honey—Pine Honey

1. The grading rules of Colorado class as not permitted in shipping grades honey contaminated by honeydew. How is honeydew detected in the comb?

2. I found a good many granulated cells in my honey. The last time I went over my apiary I had taken the honey off three weeks before, so this must have been new honey. Can you suggest the cause of the granulation?

3. In this vicinity, 30 miles north of Chattanooga, all of the honey stored before May 20 this year was decidedly bitter. Some say it was peach bloom, some black gum, some dogwood. Do any of these cause bitter honey?

4. I have been inclined to think the bitter honey came from the bitterweed or yellow fennel, which was stored in the brood-chambers last September, as there were lots of it in this section last fall. Some of my colonies storing as much as 20 or 30 pounds apiece in supers. It was as bitter as quinine. I fed it to weaker colonies. Could this have been removed from the brood-chamber and carried into the super, as they wanted to make room for the brood, and mixed with other honey?

5. Do bees and bumblebees ever sting each other to death? My wife, son and I witnessed a battle royal between two honeybees and a large bumblebee. This was fought on a board in front of the hive—we had put it there to keep down the grass. We watched the struggle in breathless suspense for about ten minutes, when one of the bees crawled off from the board. The other bees of the hive paid no attention to them. In the fight which was decidedly rough and tumble, the bumblebee seemed to hold the bee in such a way that it could use its stinger on it; but we were not absolutely sure that it stung it. Soon they both became quiet and seemed to be dead. On examining the bumblebee we found a honeybee stinger was sticking in its neck. This may be a common occurrence to beemen, but was new to us. We have only been in the business three summers.

6. Do bees ever make honey from pines? My bees are bringing in quite a little honey now, Aug. 9, when usually there is nothing doing in this section except a few cowpeas that about feed the bees. It has been very dry here for three weeks, following an unusually wet spell. During most of this time the majority of the pines in this place have been covered with bees, and a fine flavored honey is being stored. TENNESSEE.

ANSWERS.—1. I'm not sure that Colorado officials have any particular rule as to how it is to be detected; but a good guess can be made by both looks and smell while in the comb, and if necessary it can be sampled by taste. It generally has a cloudy look that honey does not have, and its smell is peculiar. Even if a certain sample of honey could not be positively identified as honeydew, if it were so much like it as to make it difficult to decide, I suppose it would be ruled out. Possibly I'm off in my views, and shall be glad if Mr. Rauchfuss will straighten me out.

2. I don't know. There are certain kinds of honey that granulate in the hive very speedily, and you may have something of that kind. The presence of granules hastens granulation, and it is possible that you had sections from the previous year that had not been thoroughly cleaned out.

3. I'm rather glad to live where I have no chance for practical knowledge as to such objectionable honey, although sorry I can not answer your question. Perhaps some one who knows will tell us about it.

[*Helenium tenuifolium*, also called "bitterweed" and "sneezeweed," yields bitter honey, but it is not the same as fenne *Anthhnus cotula*, which is a chamomile and yields no honey. Description of "bitterweed" was given in our December, 1914, issue.—EDITOR.]

4. It is possible. Generally the honey in the brood-chamber is used up for brood, but if the queen were crowded for room the bees might carry honey from the brood-chamber into the super to make room for her.

5. I think it is not very uncommon for a bumblebee to attempt to enter a hive, and to be seized by the bees. I have seen such cases, and oftener I have seen the dead body of a bumblebee at or near the hive entrance, the hairs stripped from its body. I have an impression that the honeybees are never stung by the bumblebees, although the honeybees often sting the bumblebees but I may be mistaken.

6. Yes, bees store from pines, in some, parts of Europe very largely.

Robbing—Moth

1. Last spring I put a hive in a tree with one brood-frame in it. The last of June a small swarm of bees came to it (about half a gallon of bees). I took a frame of brood

out of another hive and gave it to them. They built up two other brood-combs. I looked at them two weeks ago and found that the brood was not capped, and when I picked it out it was like thick clabber. On Sept. 11, I noticed that they were all excited and acting as though they were going to swarm. I smoked them and then sprayed them with water and they quieted down.

On Sept. 12, in the morning, the bees were all gone and very little honey was left. In a little while I noticed many bees going in. I opened the hive and they were robbing it. I stopped the entrance and they started to rob another hive. It was a colony twice as strong as they were. I threw grass over the entrance and sprayed them, but they kept on just the same, and at night I opened the hive and there were not more than two handfuls of bees.

2. What can I do to keep out the moths? I have closed the entrance down to about two inches, but they will get in just the same. I had a small colony of about a gallon of bees. I gave them five frames and put in a division-board, and today I opened the hive and the moths were all through them.

NEBRASKA.

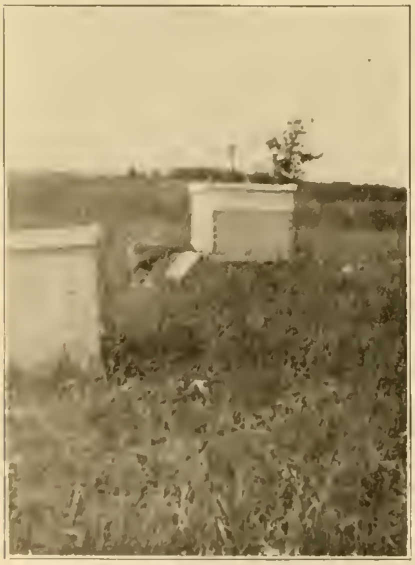
ANSWERS.—1. It looks like a case of robbing, aggravated by the fact that there was perhaps a dearth of pasturage.

2. You cannot keep the moth out, no matter what kind of hive nor what kind of entrance. Any entrance that admits a bee will admit a moth. The only thing to keep the moth out is the bees themselves. Have the colonies strong enough and they'll take care of the moth. Italians, however, are much better in this respect than blacks. A weak colony of blacks will give up to the moth where a colony of Italians of the same size will keep them at bay.

Cleansing an Extractor

I have a chance to buy a honey extractor that has been used very little, and as there is a chance for foulbrood, I would like to know if I should buy it, if there is some way to disinfect it so that there would be no likelihood of carrying disease to my apiary and at the same time leave no objectionable odor that would ruin honey? Could it be thoroughly disinfected with hot water or steam? KENTUCKY.

ANSWER.—Washing thoroughly with water—or with steam—should be all the disinfection needed.



A CHICKEN EATING BEES
(Probably drones.)

Prevent Swarming—Good Bee Country

1. Would it do to catch a pound of bees from a colony in the spring and put them in a new hive with nothing but the foundation and a new queen?

2. Would it keep the other bees of the parent hive from swarming?

3. Is southern Indiana good for bee rearing? We have the smartweed, goldenrod, honey locust, blackberries, Simpson weed and clover.

4. Are wild cherry blossoms good for honey? There are a good many wild cherry trees here.

5. My brother's ambition and my own is to own a thousand or more colonies of bees, can we take care of them by ourselves? Could we make a living out of them? We are not afraid of work. INDIANA.

ANSWERS.—1. Yes, but you would have to imprison the bees for two or three days to prevent their going back to their old home.

2. It might not prevent swarming, but it would delay it.

3. It is considered good.

4. I don't know; but I suppose they are; fruit trees in general are good.

5. Too bad to throw cold water upon such ambitions, but it is only fair to say that they are seldom realized. Rightly managed, a good deal less than a thousand colonies should make a living for two. But it will hump you to take care of them without help

REPORTS AND EXPERIENCES

Chicken Caught Eating Bees

I am enclosing a picture of a chicken caught in the act of eating bees from the entrance of the hive. This may be of interest to your readers. W. P. KELLY.
Augusta, Wis., Oct. 3.

[We believe that chicken is eating *drones* and not worker bees. We have often seen chickens do that. We have never heard of their eating worker bees.—EDITOR.]

ANOTHER VIEW OF THE CHICKEN BEE-EATER

Fastening Sheets of Foundation

I notice on page 207, in the June number of the American Bee Journal for 1015, the question asked how to fasten sheets of foundation to the top-bars of shallow frames without grooves or wedges.

I should like to suggest my way: It is simple, and there is not the inconvenience of using melted wax and rosin as suggested in the answer on page 207. I take a knife and slash in about ¼ of an inch every 3 or 4 inches along the upper edge, and at each end of the foundation or at the upper edge, and one end of the the foundation should be shorter than the frame.

I lay the sheet of foundation on a flat surface with a square edge, a board or square edge table, or the edge of a frame will do, I let the foundation project the distance of slash over board and bend down every other one. Then turn over and bend the remaining ones the opposite way. Now it is ready to fasten in frames or sections. Heat a knife by the light of a lamp, and place foundation in frames; first sear down to top-bar the spaces turned over on one side; then turn frame around and fasten down the other side. Next proceed with the ends. I sear down only about ½ depth of the ¼ inch turned down. Even though you should use full sheets it is not necessary to fasten to bottom-bar. While fastening comb-foundation I turn the top-bar down, then the ends until all are fastend.

I have used this method of fastening foundation with best results, even when I have had to haul my new swarms quite a distance. I am 19 years old. CHAS. B. SAUNDERS.
Merom, Ind., Oct. 11.

Good Prospects

During this season I have increased my apiary from 24 colonies to 42, and they have averaged me about 95 pounds of fine comb honey, spring count.

With an abundance of rain this fall the prospects are very good for 1916.
GLENN S. PLATNER.
Center Junction, Iowa, Sept. 27.

Poor Year

This has been one of the poorest years for bees we have ever had. We had so much rain and cold weather we had no honey until heartsease bloom, and that honey is so strong that I am feeding it back to the bees. H. F. HILLEBRANDT.
Osborne, Kans.

Exhibit at the Kansas State Fair

I am sending under separate cover a photograph of our honey and bee exhibit at the Kansas State Fair of 1915. I believe it was the best show that we ever had. We had three large exhibits.

J. A. Nininiger, with about 2000 pounds of honey with bees.

J. P. Lucas, of Topeka, with 700 pounds of honey, beekeepers' supplies and demonstration with bees.

W. I. Measer, a fine exhibit of about 800 pounds of honey, a full colony of bees with fruit of different varieties to show the effect of bees on fruit.

The honey crop was light this year.
W. I. MEASER.
Hutchinson, Kan., Sept. 28.

Good Increase

I had 100 colonies in the spring, which increased to 180. The yield in honey was 3500 pounds, 1000 pounds of extracted and 2500 pounds in comb honey.

I find the American Bee Journal of much value in my work with bees, and would not think of getting along without it.
CHAS. J. MILLER.
Long Prairie, Minn., Oct. 1.

Good Year

Take it in all this has been a very good year here in Crawford county. Bees came through the winter with some stores. The weather in early spring was ideal, and my colonies almost filled the first stories from fruit bloom, which was heavy, for we had about two weeks of fine warm weather during that time. New swarms were good and strong and not overdone. Then the weather set in wet and bees stored almost no honey until Aug. 1, when from buckwheat, Spanish-needle and many other nectar yielding plants, the best honey flow we have had in three years began and is still on I never saw my bees fill a super as quickly as they have this September, and with showers and warm weather it may last some weeks yet.

White clover was a failure here this year, on account of the two preceding dry summers, but I look for a good white clover crop here next year, as it is coming on everywhere. C. M. BARRICK.

Robinson, Ill., Sept. 27.

Late Flow Good

Here in northern Indiana the early part of the season was cool and wet, and little honey was gathered. The heartsease, white sweet clover and goldenrod opened late, but now we are having a good flow. Some colonies have added 5 pounds to their weight the last four or five days.

Mishawaka, Ind., Sept. 15. O. H. FORD.

Honey in Spite of Adverse Weather

With me, this has been a season of continual swarming. First swarm came out late as July 13, but since then my bees have made up for lost time. I had 40 colonies, spring count, and now have 70.

Last July we had 20 rainy days, and August so far is as bad, yet up to-date I have more honey than at same time last year. In the early part of the season it was cold, cloudy and windy. I had second full-depth supers on 27 days without any work being done in them, when suddenly things went forward with a bound. CHAS. REYNDERS.

Ulster, Pa., Aug. 23.

Bees in Fine Condition for Winter

My bees are in fine condition for winter, even at this date I find some unhatched brood. The hives are full of young bees.

Elroy, Wis., Oct. 5. CHAS. SHELDON.

Bad Beginning but Good Ending

The first part of this season was very wet and cold, no honey coming in beyond what was consumed, until the first of July, then we had a fair flow for three weeks. August was cold and bees did nothing. We had a light fall flow in September. I extracted about 1000 pounds from 35 colonies, spring count, and have plenty of stores left for winter. Colonies are strong in bees and brood and have lots of pollen.

Bunceton, Mo., Oct. 4. J. R. MORGE.

Poor Season

My honey crop this year is a minus quantity. I don't think the bees have enough honey to winter on, and I am feeding them some sugar. GEO. E. CAPWELL.

Cottonwood Falls, Kan., Oct. 1.

Free Until 1916

Have you subscribed yet for The Youth's Companion for 1916? Now is the time to do it, if you are not already a subscriber, for you will get all the issues for the remaining weeks of 1915 free from the time your subscription with $2.00 is received.

The fifty-two issues of 1916 will be crowded with good reading for young and old. Reading that is entertaining, but not "wishy-washy." Reading that leaves you, when you lay the paper down, better informed, with keener aspirations, with a broader outlook on life. The Companion is a good paper to tie to if you have a growing family—and for general reading, as Justice Brewer once said, no other is necessary.

If you wish to know more of the brilliant list of contributors, from our ex-Presidents down, who will write for the new volume in 1916, and if you wish to know something of the new stories for 1916, let us send you free the Forecast for 1916.

Every new subscriber who sends $2.00 for 1916 will receive, in addition to this year's free issues, The Companion Home Calendar for 1916.

THE YOUTH'S COMPANION
BOSTON, MASS.

New Subscriptions Received at this Office.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook,
1Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, $1.00. Tested, $3.00. Breeders, $5.00 and $10.
Robert Inghram, Sycamore, Pa.

FOR SALE—About 35 colonies bees in 10-fr. hives in good condition.
[Mrs.] W. B. Moore, Altona, Ill.

PHELPS' Golden Italian Bees are hustlers.

QUEENS FROM THE PENN CO. See our large ad. elsewhere in this Journal.

FOR SALE—40 colonies bees in 10-frame hives; mostly Carniolans heavy with stores.
N. S. Burrier, Sellman, Md.

BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co.,
4Atf Greenville, Tex.

PLACE your order early to insure prompt service. Tested, $1.25; untested, $1.00. Italians and Goldens. John W. Pharr,
Berclair, Tex.

QUIRIN'S superior improved queens and bees are northern bred, and are hardy. Orders booked now. Over 20 years a breeder. Free circular. H. G. Quirin, Bellevue, Ohio.

I CAN supply you with Golden or three-banded Italian queens. Tested, $1.00 each; six or more, 85c each; untested, 75c each; six or more, 65c each. Bees, per pound, $1.25. Nuclei per frame, $1.25. Write for prices on large orders. Everything guaranteed.
I. N. Bankston, Buffalo, Tex.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, $1.00 each; Tested, $2.00; Breeders, $5.00 and $10.00.
2Atf J. B. Brockwell, Barnetts, Va.

THE SECRET OF SUCCESS is in having your colonies headed by good prolific queens. We have good Italian queens at 75c for untested and $1.00 for tested G. W. Moon,
1904 Adams St., Little Rock, Ark.

QUEENS, improved three-band Italians bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, $8.00; Select, $1.00 each; dozen, $10. Tested Queens, $1.25; dozen, $12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, $1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., $1.50; Nuclei, per frame, $1.50. C. B. Bankston,
Buffalo, Leon Co., Tex.

QUEENS from my honey-gathering stock, 3 and 5 band Italians. Bred in separate yards. Queens the rest of the season—one, 75c; six, $4.00; 12, $7 00; 25, $13. Safe arrival and satisfaction guarannteed.
D. E. Brothers, Attalla, Ala.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, $1.00; six, $5.00; Tested, $3.00; Breeders, $5.00 and $10. C. W. Phelps & Son,
3 Wilcox St., Binghamton, N. Y.

FOR SALE—250 colonies high grade Italian bees in 10-frame modern white pine hives. Equipped for extracted and comb honey. Located in southwestern Oklahoma. Fine climate and extensive and virgin alfalfa pasture. Fine opportunity. Must sell quickly because of other business changes.
A. W. F. Lee, Cordell, Okla.

SUPERB Golden and 3-banded queens at $1.00 for one; $7.50 for 12; $32 for 50; $60 per 100. Bees in pound packages in season.
Frank A. Leib, R. F. D. 7, San Jose, Calif.

HONEY AND BEESWAX

WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co.,
6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Fine quality raspberry, milkweed honey in new 60-lb. cans (2 in case). Write for sample and price.
P. W. Sowinski, Bellaire, Mich.

FOR SALE—Clover, heartsease, No. 1 light comb, $3.00 per case; fancy, $3.25; 24 Danz. sections to case. Extracted, 120-lb. cases, 9c per pound. W. A. Latshaw, Carlisle, Ind.

FOR SALE—Light extracted honey, clover and basswood blend, in any style packages. Write for prices. Sample, 10 cents, which may apply on order. M. C. Silsbee,
R. F. D. 3, Cohocton, N. Y.

I HAVE 5000 lbs. of buckwheat-goldenrod blend of honey which I am offering for quick sale at 6⅔c per lb. Put up in two 5-gal. cans to case of 120 lb. net. Ira D. Bartlett,
East Jordan, Mich.

FOR SALE—Clover honey, 10 cts. lb. Clover and basswood, blend, 9 cts. lb. Light amber honey, 8 cts. lb. White sage honey, 8¼ cts. lb. All in cases of two 60-lb. cans. Amber honey, 7 cts. lb.; in barrels, 6 cts. lb. Sample 10 cts. Stringham, 105 Park Pl., N. Y. City.

FOR SALE—Well ripened and mild flavored extracted honey, two 60-pound cans to case, white, 7c; amber, 6c per lb. Amber put up in pails, six 10-lb. or twelve 5-lb. for $6.00. Fall comb honey, No. 1, $3.00 per case; No. 2, $2.75; No. 3, $2.50 per case of 24 section, six cases to carrier. H. G. Quirin, Bellevue, Ohio.

FOR SALE—Water-white alfalfa, white clover, amber alfalfa, and amber fall honey in 60-lb. cans or smaller packages. Amber fall honey is of our own extracting, and can also be furnished in barrels. Write for sample of kind desired and state quantity you can use. Dadant & Sons, Hamilton, Ill.

YOU MAKE a mistake in not subscribing for the Beekeepers' Review, Northstar, Mich., for they are buying supplies of all sorts for the subscriber at cost. One subscriber saved $30 on a single order; many have saved from ten to twenty dollars during a season. Fifteen months for a dollar, beginning with the October number. Do it today.

HONEY LABELS

YOUR PROBLEM of a low priced, yet neat and attractive Honey Label is solved. Catalog and Samples FREE. Liberty Pub. Co.
Sta. D., Box 4H, Cleveland, O.

SITUATIONS.

WANTED—A position in large apiary for 1916, or might buy a large apiary North or South, but South preferred.
Wm. H. Brown, Spring Hill, Ala.

FOR SALE

FOR SALE—A small beekeeper's outfit, bees and all. Price low. Write.
Chas. A. Barta, Smithville, Tex

WANTED to hear from the owner of good farm for sale. Send cash price and description. D. F. Bush, Minneapolis, Minn.

THE BEEKEEPERS' REVIEW, 15 months for a dollar, beginning with the October number. Foreign postage, 24 cts. additional. Address, with remittance, the Beekeepers' Review, Northstar, Mich.

FOR SALE—Why not locate your apiary in Calif. We will supply the bees, fixtures and locations in the finest honey-producing districts, and sell one or more apiaries on easy terms of payment. Write us.
Spencer Apiaries Co., Ventura, Calif.

THE BEEKEEPERS' REVIEW buys your supplies for you at greatly reduced prices from list, sells your honey for you without cost, also what surplus bees you have are readily sold by listing them in our free-to-subscriber list. If you want to buy honey, there is a list of producers who can furnish you with the different kinds direct. Write direct to the one nearest you that has the kind you may be in need of. Those are some of the advantages of subscribing for the Beekeepers' Review, Northstar, Mich.

FOR SALE—Cedar or pine dovetailed hives, also full line of supplies including Dadant's foundation. Write for catalog.
A. E. Burdick, Sunnyside. Wash.

FOR SALE—Friction-top pails, 5-lb. size per 100, $4.5c; 10-lb. size, $6.25 per 100; 60-lb. cans, two in a case, 10 cases or more, 6cc; 25 cases, 59c; 50 cases or more, 58c per case. All f. o. b. Chicago.
A. G. Woodman Co.,
Grand Rapids, Mich.

STANDARD DOVETAILED HIVES shipped direct from factory in Iowa. Five 8 frame for $6.00. Hoffman frames, $2.75 per hundred. Plain sections, $4.20 per M. Write for prices on what you need—a full line. Queens, 50c each. Write for large lots in July, August.
The Stover Apiaries, Mayhew, Miss.

UNHEARD of prices on friction top pails in reshipping cases. Here is a sample of the Review prices; 2-lb. cans, 24 in a reshipping case, at 50 cts. per case; 2½-lb. can, 24 in a reshipping case at 50 cts. per case; 5-lb. pails, 12 in a reshipping case, at 55 cts., 10 lb. pails, 6 in a reshipping case, at 45 cts. per case. Liberal rebate made on orders of 25 cases or more. Enclose a dollar for 15 months' subscription of the Beekeepers' Review, Northstar, Mich., with your first order.

FOR SALE — Relinquishment to 80-acre homestead with all improvements, and 100 stands of bees; all strong and vigorous colonies. An ideal location for beekeepers, being in one of the best alfalfa-producing sections of Montana. Sweet clover in abundance. No crop failures. Close to school and direct on mail route. Price, $1200.
William Schulze, Belfry, Carbon Co., Mont.

THE BEEKEEPERS' REVIEW is having made what is without doubt the best parcel-post package on the market. Listen: Double corrugated-paper case that needs only a string around it for mailing. Notice those prices: 100 one-gallon tin cans and cases at at only $11; 100 half gallon at only $8.00; 100 quarter gallon at only $6.00. The can is the regular screw-cap syrup can you are all familiar with. Compare these prices with others on the market, and send a dollar for 15 months' subscription to the Beekeepers' Review, Northstar, Mich.

Grading Rules of the Colorado Honey-Producers' Association, Denver, Colo., Adopted Feb. 6, 1915.

(*All honey sold through the Colorado Honey-Producers' Association must be graded by these rules.*)

COMB HONEY.

FANCY.—Sections to be well filled, combs firmly attached on all sides and evenly capped, except the outside row next to the wood. Honey, comb and cappings white, or slightly off color. Combs not projecting beyond the wood, sections to be well cleaned. No section in this grade to weigh less than ½ ounces net or 13½ ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 12½ ounces."

The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NO. 1.—Sections to be well filled, combs firmly attached, not projecting beyond the wood and entirely capped, except the outside row next to the wood. Honey, comb and cappings from white to light amber in color. Sections to be cleaned. No section in this grade to weigh less than 11 ounces net or 12 ounces gross. The top of each section in this grade must be stamped, "Net weight not less than 11 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

NO. 2.—This grade is composed of sections that are entirely capped except row next to the wood, weighing not less than 10 ounces net or 11 ounces gross. Also of such sections that weigh 11 ounces net or 12 ounces gross, or more, and have not more than 50 uncapped cells altogether, which must be filled with honey. Honey, comb and cappings from white to amber in color. Sections to be well cleaned. The top of each section in this grade must be stamped, "Net weight not less than 10 ounces." The front sections in each case must be of uniform color and finish, and shall be a true representation of the contents of the case.

COMB HONEY THAT IS NOT PERMITTED IN SHIPPING GRADES.

Honey packed in second hand cases.

Honey in badly stained or mildewed sections.

Honey showing signs of granulation.

Leaking, injured or patched up sections.

Sections containing honey-dew.

Sections with more than 50 uncapped cells or a less number of empty cells.

Sections weighing less than the minimum weight.

All of such honey should be disposed of in the home market.

EXTRACTED HONEY

Must be thoroughly ripened, weighing not less than 12 pounds per gallon. It must be well strained and packed in new cans, 60 pounds shall be packed in each 5 gallon can, and the top of each 5-gallon can shall be stamped or labeled, "Net weight not less than 60 pounds."

Extracted honey is classed as white, light amber and amber, the letters "W," "L. A.," "A." should be used in designating color, and these letters should be stamped on top of each can. Extracted honey for shipping must be packed in new, substantial cases of proper size.

STRAINED HONEY

Must be well ripened, weighing not less than 12 pounds per gallon. It must be well stranied, and if packed in 5-gallon cans each can shall contain 60 pounds. The top of each 5-gallon can shall be stamped or labeled "Net weight not less than 60 pounds." Bright clean cans that previously contained honey may be used for strained honey.

HONEY NOT PERMITTED IN SHIPPING GRADES.

Extracted honey packed in second-hand cans.

Unripe or fermenting honey, weighing less than 12 pounds per gallon.

Honey contaminated by excessive use of smoke.

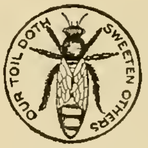
Honey not properly strained

Honey contaminated by honey-dew.

Celluloid Queen-Buttons

These are very pretty things for bee-keepers or honey-sellers to wear on their coat-lapels. They often serve to introduce the subject of honey, which might frequently lead to a sale.

NOTE. — One bee-keeper writes: "I have every reason to believe that it would be a very good idea for every bee-keeper to wear one [of these buttons], as it will cause people to ask questions about the busy bee, and many a conversation thus started wind up with the sale of more or less honey; at any rate it would give the bee-keeper a superior opportunity to enlighten many a person in regard to honey and bees."


OUR TOIL DOTH SWEETEN OTHERS

The picture shown above is a reproduction of a motto queen-button that we offer to bee-keepers. It has a pin on the underside to fasten it.

PRICES—by mail—1 for 6 cts.; 2 for 10 cts.; or 6 for 25 cts

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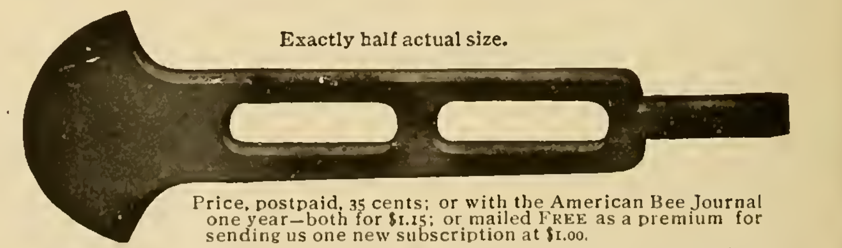

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DECEMBER, 1915

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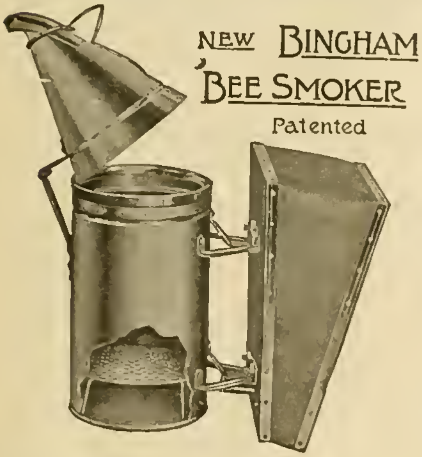

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	Nov 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested........	$1.50	$7.50	$13.50	$1.25	$ 6.50	$11 50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ .75
Select Untested	2.00	8.50	15.00	1.50	7.50	13 50	1.25	6.50	12.00	1.00	5.00	9.00
Tested...........	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8 00	15.00
Select Tested..	3.00	16 50	30.00	2.75	15.00	27.00	2 50	13.50	25.00	2.00	10.00	18.00

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Second—A system of distribution that will protect the local producer, and prevent flooding one district and leaving others bare.

Third—A system of crop reports that will give accurate, detailed, and trustworthy information as to crop conditions in all sections promptly and intelligently.

Fourth—An efficient method of presenting facts and reasons for the wider use of honey in cooking, in the arts, manufactures, and on the table, to the people who who would use it if they knew.

Fifth—An association of beekeepers who will carry these things forward to a successful consummation.

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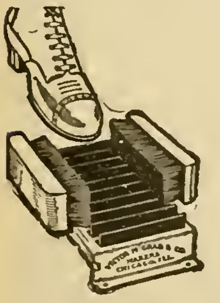

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AMERICAN BEE JOURNAL, HAMILTON, ILLINOIS

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First Lessons in Beekeeping.—A 190-page bee-book, well illustrated, and with attractive paper cover. As its name indicates, it is primarily for the beginner, but is useful as well to the experienced beekeeper. A general outline of the bee, its work, appliances for beekeeping, honey, etc., is given. Price, 50 cents, postpaid, or with American Bee Journal one year, only $1.00.

HONEY AND BEESWAX

CHICAGO, Nov. 16.—Arrivals of honey, both comb and extracted, are in excess of the demand at this time. Yet, that is a normal condition, as it pays to get comb honey into market before cold weather, which always has a tendency to take the elasticity out of the comb; thus making it more liable to break away from the wood.

There is no material change in prices of the best grades of white comb, although sellers to obtain a sale of a large quantity will lower the price, which now ranges from 16@17c per pound for the two highest grades. Amber grades range at from 12@14c per pound. Sections with more than one color and empty cells bring from 10@12c per pound. White extracted honey ranges in price from 7@9c per pound, sales being chiefly made at 8c per pound, as only a very ripe high flavored honey will sell at 9c per pound, and that in a single can or case way. Ambers are ranging from 5½@6c per pound, with some highly flavored, ripe and of heavy body at 7c per pound. Beeswax is dull at 28@30c per pound. R. A. BURNETT & CO.

KANSAS CITY MO., Nov. 16.—There is not very much change in our honey market since our last quotations. The supply of both comb and extracted honey is large. We quote No. 1 white comb honey, 24 section cases, $3 15 to $3.25; No. 2, $2.75 to $3.00; No. 1 amber comb honey, $3.00 to $3.10; No. 2, $2.50 to $2.75. White extracted, per pound, 7½@8c; amber, 5½@7c. No. 1 beeswax, 28c; No. 2, 25c per pound.
C. C. CLEMONS PRODUCE COMPANY.

CINCINNATI, Nov. 11.—The demand for honey is increasing, which is the general rule for this time of the year. Comb honey is selling fast at $3.75 to $4.00 per case for fancy white. Amber comb honey is not wanted in this market at any price. For choice white clover extracted honey we are getting from 7@9c a pound; for amber extracted in barrels from 4@7c, according to the quality and quantity purchased. We are paying 28c a pound delivered here for choice bright yellow beeswax. THE FRED W. MUTH CO.

DENVER, Nov. 20.—The new crop of comb honey is selling locally at the following prices: Fancy, $3.60 per case of 24 sections; No. 1, $3.38, and No. 2, $3.15. Local prices on extracted honey unchanged, namely white, 8½@8¾c; light amber, 8@8¼c; amber, 7@8c, demand light. We pay 25c per pound in cash and 27c per pound in trade for clean yellow beeswax delivered to us here.
THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, *Mgr.*

NEW YORK, Nov. 18.—The new crop of comb honey is rather slow in arriving; still there is not a very heavy demand as yet, probably due to the intense hot weather of late. Prices are ruling at from 15@16c per pound for fancy white; 13@14c per pound for No. 1; 10@12c per pound for off grades. The market on extracted is quiet and inactive; there seems to be an abundant supply of clover and linden as well as California sage and alfalfa. West Indian honey is arriving right along with prices showing a downward tendency.

Beeswax is coming in steadily at from 30@31c per pound.
HILDRETH & SEGELKEN.

LOS ANGELES, Nov. 19.—The market quotations on California honey are as follows: White extracted honey 6c per pound; light amber, 4c. Beeswax, 25c. Fancy white comb honey, $2.75 per case—all f. o. b. Coast.
HAMILTON & MENDERSON.

INDIANAPOLIS, Nov. 16.—Comb honey is arriving quite freely as well as extracted of fine quality. The demand for comb and extracted is good, more especially comb. We quote as follows: No. 1 choice white comb, $4.00 per case; choice light amber, $3.75; No. 2 white comb, $3.50 per case. Extracted of excellent quality in 60-pound cans, in small lots, 9½@11c per pound.

We are paying 28c cash or 30c in trade for good beeswax delivered here.
W. S. POUDER.

MORE MONEY FOR YOUR HONEY
WHEN PACKED IN
LEWIS SUPERB SHIPPING CASES

After you have harvested a nice lot of comb honey do not make a serious mistake by putting it up ready for the market in a cheap appearing case such as a home-made one or that turned out by a local planing mill. The best and most economical (taking the sale of the honey into consideration) case must be turned out with the same careful workmanship and with the same selection of proper material as goes into the making of first-class bee hives and honey sections such as we manufacture.

It is an acknowledged fact that comb honey put up in attractive Lewis Shipping Cases will bring from one to two cents per pound more than the same honey put up in poor cases. Do not cheapen your product by inferior cases. You can afford the best—remember your shipping cases are the show windows for your goods. Your honey will bring more money if well displayed.

INSIST ON THE LEWIS MAKE

Lewis Shipping Cases are cut accurately out of clear, sound basswood lumber. All of these cases are neatly packed, and include the proper size nails for nailing them up.

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COLORADO	Grand Junction Fruit Growers' Association	Grand Junction
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PORTO RICO	Fritze, Lundt & Co. S	Ponce
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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., DECEMBER, 1915

Vol. LV.—No. 12

A Beekeeper's Life Story

In the January number, we will begin a short autobiography of our esteemed and much appreciated co-worker, Dr. Miller. Persons who are not acquainted with the circumstances, as to our connection with our aged friend, may wonder that we should take any space to publish the autobiography of an editorial associate, but those who know him are aware of the fact that Dr. Miller is not solely a constant contributor of the American Bee Journal. His work with Gleanings in Bee Culture is as much appreciated and as regular as his work with us. He has often written for magazines, and was the apiarian authority of one of the best unabridged dictionaries, the "Standard Dictionary." He is therefore a national character in beekeeping. Nay, his standing is international, for all who have perused the English, French, Swiss, Italian, Japanese, German or Russian bee-publications have frequently met his name.

Dr. Miller has been called the "Nestor" of American beekeeping. Perhaps some of our readers, not versed in Greek mythological history, will wonder what that name means. Nestor was one of the Greek chiefs who took part in the Siege of Troy. In order that our friends may judge whether the title was properly applied, let me quote what Larousse says of Nestor: "He was the oldest of the Greek heroes. With a consummate experience in all things, he had nevertheless retained the vigor of mature age, and was as valiant as wise in counsel. Nestor has remained the emblem, the personification of wise, experienced and benevolent old age."

Those of our subscribers who have had occasion to ask questions to be answered in Dr. Miller's special department can all tell whether this description fits him.

The autobiography will be short, running through four or five numbers of the Journal. It will be accompanied by eight or ten photographs and daguerreotypes, some of which were taken in his young days, some 70 years ago. It will not be accompanied by lengthy apiarian descriptions or accounts. Much of our old friend's beekeeping experience has been mentioned in "Fifty Years Among the Bees," and this is not to be a repetition. It will be an octogenarian's account of his young days, of his fight through life while turning to this particular pursuit, and if our subscribers enjoy the reading of it half as much as did the writer of this announcement, we will be satisfied.

DR. MILLER AT 84

Most of our readers are aware of Dr. Miller's extraordinary crops of comb honey. These immense crops were due to his judgment in the selection of reproducers, to getting the largest possible force of field bees ready for the harvest and to careful and attentive management during the harvest. We might expect him to speak of the results achieved, but he says nothing of that in his autobiography. We sent him some enquiries to which he replied as follows:

What is the largest number of colonies which you have kept at one time? "I never had more than 400 colonies of bees and they were kept in four apiaries."

Have you kept a record of the amount of honey you have produced altogether? If so, what is the total? "No, I've no idea of the amount of honey I have produced. A hundred tons might be a conservative guess."

Although very interesting in his published writings, Dr. Miller is still more so in his private correspondence, which bristles with witticisms and bons mots. In private, he uses the reformed spelling—phonetic spelling—recommended by the American Philological Association, which was used by our former editor, Geo. W. York, in the American Bee Journal for several years. This sometimes adds piquancy to his reremarks. May we give some samples of his private correspondence without indiscretion?

The autobiography was begun in December, 1914, at our request, but was delayed by one thing and another and lately by our demand for photographs, to illustrate it. At one time we wrote the Doctor an appreciation of an excellent editorial he had sent us and asked him about the biography. Here is a part of the reply:

"Yours of 11th came this morning and, as always, I read it aloud. Mrs. M. said, 'That's a good letter.' Her sister added, 'It ought to warm the cockles of your heart.' Fact is—no use denying it—you're an appreciative cuss—tomer, and I appreciate appreciation. I suppose now I ought to be very modest and depreciate any special value in what I wrote. I'm not modest, not a bit; I think it's one of the best things I ever wrote—thot so when I sent it.

"You're evidently just a bit afraid that I'll never get started at that autobiography. You forget that I have a wife, also that she is a warm friend of yours. So it was only the natural thing that in her gentle persuasive way she should keep me reminded of it. As a result I began it quite a number of days ago. But so many duties come in that I don't get on very fast. If I get something done at it today, then it may be crowded out for several successive days. Another thing that makes it go slow is that I am making it very full, putting in trivial things that the public can take no interest in, altho perhaps as a personal friend they may interest you. The reason for it is that I am writing it at the same time for my family, and you can omit all you don't care for, while you couldn't add if I omitted."

Regarding the photos, we wanted to show Dr. Miller at work, in shirt sleeves, among his bees, but whether from his own fancy or from the desire of the ladies, it was thought best to have his "picture took" in style, and he wrote: "It was thot my whiskers were a little too bushy to be fit for a picture to occupy so exalted a position as contemplated (American Bee Journal cover page), so I went to the barber and askt him to trim them off a little. Instead of that he took off so much that you wouldn't want to present me in such a plight; so now I've got to wait for at least a little growth. Fortunately the growth is pretty rapid."

After the pictures were taken: "The fotografer wrote me last week that he would have the picture finisht Saturday. It is now Thursday and no picture yet. You're better off than I am; all you need do is to feel disgusted at the way I am treating you, while besides being disgusted at the fotografer, I'm distrest at the thot of being lowered in your esteem, an esteem that I hold in high estimation."

Nestor was said to be 90, when his counsels were of such high value to the Greek warriors. Dr. Miller will be 85 at his next birthday and appears as lucid as ever in all that he writes. It must be due to his equanimity and sobriety, an example for us all.—C. P. D.

The Food Value of Honey

In the days of our grandfathers honey had a place on every table. Honey and maple syrup were the only sweets supplied to the family. Refined sugar, as now used, was unknown. A few bees were kept to supply honey, the same as a cow was kept to furnish the family milk and butter. As the conditions of the country changed and ways of living became more complicated, new food products appeared upon our tables, and substitutes took the place of things formerly regarded as necessities.

The dairy interests of the country made a tremendous fight to prevent oleomargarine from replacing butter and the sentiment created by this organized effort was sufficient to create a demand for butter from the American public, rather than for its cheaper and inferior substitute.

Unfortunately, the beekeepers have not been organized, and while butter has continued to grow in demand and sell at constantly higher prices, the demand for honey which was once well nigh universal has been largely supplied by corn syrup and other inferior products, while honey sells at a lower price than it brought half a century ago.

The beekeeper who offers his product for sale constantly meets the statement that honey is a luxury which the man of small income cannot afford to buy. Even the beekeeper himself has accepted this view, and undertaken to build a market on this basis.

Is honey a luxury? While it may not be a necessity, no more is it a luxury than is butter or beefsteak. Some writers have pointed out that because one could not live on honey alone, it was a luxury and should be sold as such. One could as well live on honey alone as on butter alone, yet no one regards butter as a luxury.

A fair basis of values of food products is the actual food units which they contain. In order to secure reliable information as to the food values of the products which we wish to compare with honey, we have taken the table compiled by Hon. W. B. Barney, of the Iowa food and dairy department. With this table at hand we went to a retail store in Keokuk, Iowa, where probably the usual retail prices prevail, and purchased different products of equal food value.

Figure I shows 3 articles, with food value equal to 7 ounces of honey. For the quart of milk we paid 10 cents, for the codfish 20 cents, and for the eggs 25 cents. Milk and eggs are generally recognized as necessities, yet as far as food value is concerned the eggs cost more than twice as much as the honey and the milk is slightly higher in price.

In Fig. 2 is shown a 12-ounce steak which costs at retail 15 cents, yet which, according to Mr. Barney's table, is only equal to 7 ounces of honey in food value. When beefsteak is regarded as a necessity even by those who are working for the lowest wages, why should the beekeeper permit the impression to grow that his product is a luxury at half the price? Nine cents

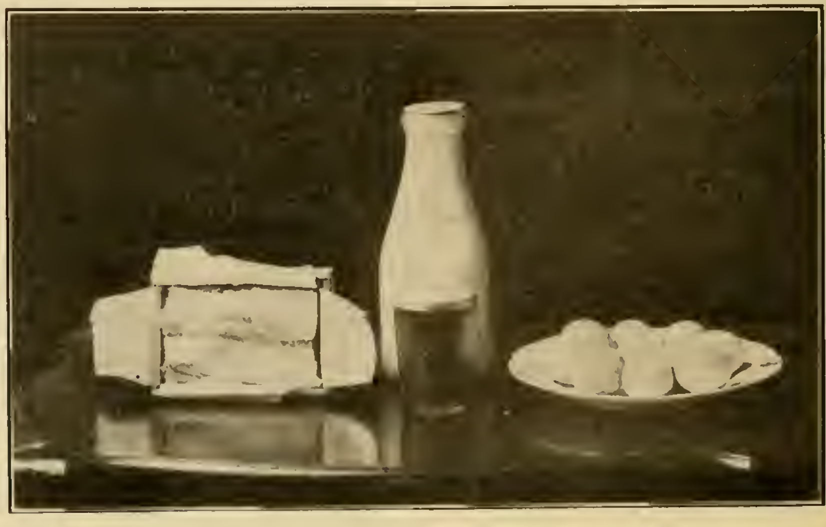


FIG. 1.—FOUR ARTICLES OF EQUAL FOOD VALUE

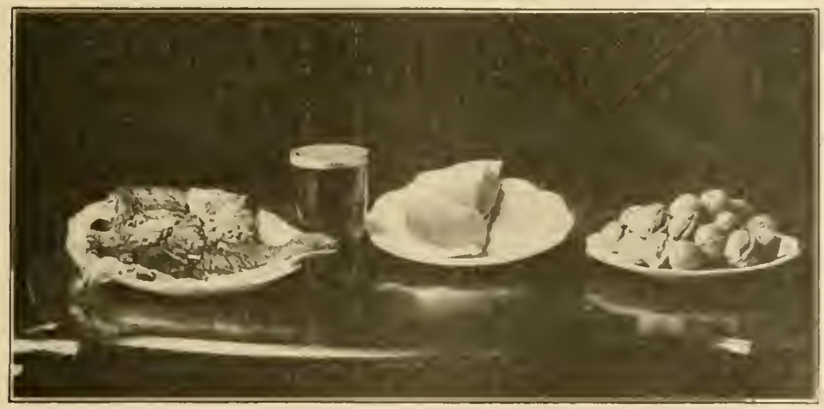


FIG. 2.—SEVEN OUNCES OF HONEY IS EQUAL IN FOOD VALUE TO THE OTHER ARTICLES SHOWN

worth of cream cheese is equal to 7 ounces of honey, yet even this costs more than the product of the hive. Thirteen cents worth of walnuts are necessary to equal the small jar of honey. Since extracted honey usually sells at less than 16 cents per pound at retail, 7 cents will not be far from the cost.

Figure 3 shows that 8 oranges, which cost 20 cents, supply an amount of food equal to 7 ounces of honey, and 5 bananas, at 25 cents per dozen, cost 10 cents.

The following table shows the amount of the various items required to supply food value equal to 7 ounces of honey, according to the above mentioned authority. The retail prices that prevail at this time are also given:

Honey, 7 ounces - -	7 cents
Cream cheese, 5.6 ounces -	9 "
Eggs, 10 - - - -	15 "
Round beefsteak, 12 ounces	15 "
Boneless codfish, 15 ounces	20 "
Oranges, 8 - - - -	20 "
Bananas, 5 - - -	10 "
Walnuts, 8½ ounces -	13 "

The above items are in general use, and few if any of them are regarded as luxuries. By reference to the above table it will be seen that as far as actual value is concerned, honey is one of the cheapest of the ready-prepared foods. Only such raw products as potatoes, cornmeal, beans, etc., which must be prepared for the table after purchase, are cheaper in food value, at current prices than is honey.

Since honey is a concentrated food product and contains little waste, it can very fairly be compared with other concentrated products like butter. If butter is worth the prices at which it sells, honey could be sold at much higher prices, without injustice to the consumer.

According to a recent number of the South African Farmer's Weekly, honey sells in many South African towns at from 36 to 54 cents per pound, notwithstanding the fact that good crops are readily produced there. Butter often sells at such prices in this country, but never honey.

Since honey contains but little waste, it can be eaten in moderate quantities with much less tax on the eliminating organs than most other foods. Dr. Imfeld, of Geneva, Switzerland, has been quoted as saying: "If people would eat more honey, we doctors would starve." It is up to the beekeepers to inform the public as to the true value of honey as food.

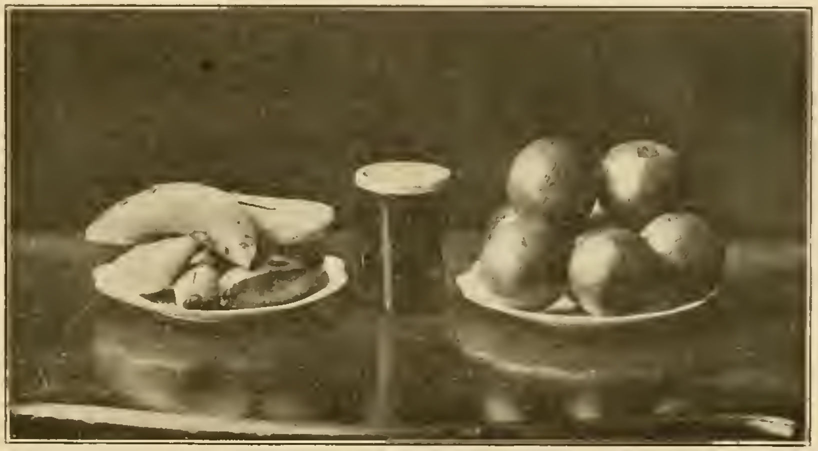


FIG. 3.—HONEY IS ONE OF THE CHEAPEST FOODS IN THE MARKET FOR ACTUAL NUTRITIVE VALUE

EDITORIAL COMMENTS

Shipping Bees by the Pound

While visiting in the province of Ontario, in the spring of 1914, the Editor ascertained that bees by the pound were imported into Canada on a large scale from the southern States. Mr. Chas. E. Hopper, of Toronto, was then receiving, for himself as well as for others, hundreds of packages. Evidently his experience as consignee and shipper of live bees at such long range must be of value, so we asked him to give us information. But he preferred to wait until he had a more extensive experience. He has now sent us a contribution upon this subject which will be found in another part of the Journal. It deserves attention from both shippers and purchasers of bees.

A thing worthy of note is the assertion that water is not needed in shipping bees that have no brood to nurse. This does not astonish us, for we determined years ago, while trying different methods in importing from Italy, that bees and queens, without water, arrived in better condition than those that were provided with water. There might be, however, conditions under which water would prove useful, cases of exposure to excessive heat with scanty ventilation.

But when colonies of bees are transported which have brood to nurse, water becomes indispensable. The more brood the hive contains the greater the requirements.

The shipping of bees, with queens, but without brood or combs, greatly lessens the danger of transmission of diseases.

Bees and Clover Fertilization

Bulletin No. 289 of the United States Department of Agriculture is before us. It is entitled "Red Clover Seed Production," by J. M. Westgate and H. S. Coe, and details the experiments made upon the fertilization of red-clover blossoms by Messrs. Wianco and Robbins of the Indiana Agricultural Experiment Station, and Messrs. Hughes, Pammel, and Martin of the Iowa Agricultural Experiment Station. It is out of the scope of our Journal to give a long account of the experiments there related. Suffice it to say that it is very interesting and that it practically confirms the experiments of Darwin, who said long ago: "One hundred heads of red clover, visited by bees, produced an average of 27 seeds per head while 100 heads protected from insects produced not a single seed." The average shown by these scientists is greater than that given by Darwin. They decide positively that although it is possible to have an occasional seed produced in clover from self pollination, clover is practically sterile unless pollen is carried to the blossom from a separate plant. Their observations show that bumblebees are able to pollinate 30 to 35 flowers in a single minute. They show also that the honeybee, when able to work upon the blossoms, is as efficient a cross-pollinator as the bumblebee.

One cannot read this bulletin without appreciating the thoroughness of these experiments. It is well worth perusing.

Expelling the Drones During a Crop

In the September number of the Swiss "Bulletin D'Apiculture," Mr. August Cordey reports the bees as driving the drones away in July during a honey crop. But he noticed that the colonies of black bees were driving away the Italian drones while the Italian colonies were driving away the black drones. He concludes that although the bees tolerate the drones from other hives at times, they may expel these (the intruders) when they do not expel their own. This, we believe, is the first time that any one has noticed or tried to establish a difference in the behavior of the bees towards the home-raised drones and the stray ones. We have always thought that they were either tolerated or expelled alike, whether home-bred or intruders.

Beekeeping in Porto Rico.—Our readers will be interested in the view of the apiary of Mr. Rodulfo Del Valle, of Ponce, Porto Rico, also with a photograph of the coffee-plant nursery, which we give herewith.

We have already given a view of the plantation in which one of the apiaries is situated. This will be found on page 405 of the December, 1914, number of the Bee Journal.

One photograph illustrates one of the improvements now being made in Porto Rico. It is a public road now being built in the mountain and leading to the district where the plantation is located. The third man from the left, holding the umbrella is our correspondent, Mr. Del Valle.

Teaching Beekeeping to Convicts

The following communication is interesting on account of the novelty of the experiment it mentions and also because the possibilities of reform and education among these unfortunates are certainly to be enhanced by outdoor pursuits. Nothing, in the opinion of reformers, will achieve greater success than the present tendency to treat convicts in a humane way, teaching them instead of punishing them.

The writer of this letter is a man of international fame. The "Wernicke" book-cases are known the world over. An article on wintering by Mr. Wernicke will be found among the contributions in this number.

It may be of interest to know that the Michigan State Prison at Jackson, with which institution I am associated as president of the Board of Control, has established three apiaries as a prison industry consisting of 50 colonies each, and will include a course in bee-culture as a part of its educational curriculum. The institution is conducting the greatest possible variety of primary industries, including the cultivation of nearly 3000 acres of land, which has proven so beneficial to the moral and physical development of the inmates that the Board of Control is contemplating the purchase of still more land.

The underlying considerations for establishment of apiaries are the possibilities for reformation, education and profit. These apiaries have only recently been established and I am unable as yet to report any success except that a very hopeful interest has been aroused not only among the inmates but among the officers of the institution. O. H. L. Wernicke.

Grand Rapids, Mich., Oct. 16.

Dr. Phillips' Book

Dr. Phillips' new book, "Beekeeping," has been read through with tense interest. The author's clear style and the clear type in which it is presented make the book easy reading, all but the five chapters which tell about the inside make-up of a bee. That part is hard for me because I know so little about it. I suspect that in many a case the pages of those chapters will remain the cleanest in the book, because the reader prefers to pass on to something of immediate interest in the production of big crops of honey, without caring to know all about the epimeral paraptera or the gonapophysis. Yet I would strongly advise the beginner not to neglect this part of the book. Even if the knowledge thereby gained should make no difference in his crops—and I am none too sure of that—he will be a better rounded-out beekeeper, and will have a joy in the work that is denied to us who know little about such things.

Without attempting a review of the book, I may be allowed to make a few comments upon some things in it, more especially those in which there may be some difference of opinion.

REMOVAL OF THE DRONES.

Dr. Phillips says regarding the disappearance of the drones at the close of the honey flow: "The first indication of this exodus is to see them in numbers on the bottom-board, and soon workers will be seen leaving the entrance carrying the heavy drones, with the base of a wing grasped by the mandibles." I wonder how many beekeepers have ever seen drones thus carried. I confess I do not remember seeing it.

APIARY OF MR RODULFO DEL VALLE, PONCE, PORTO RICO

Yet as Dr. Phillips *has* seen it, it only shows that I am none too close an observer.

QUEENLESS COLONIES AND POLLEN.

On page 85, occurs this: "It is sometimes stated that pollen is gathered only when it is needed; but this is not true, for queenless colonies gather large quantities. The advice is occasionally given to watch the entrances of colonies in the spring to determine whether pollen is coming in, it being stated that queenless colonies may be detected by a lack of pollen gathering. This is not a safe criterion." But is there no basis whatever for the persistent belief that queenless colonies gather very little pollen? Perhaps the whole truth is something like this: When a colony becomes queenless, the bees keep right on gathering pollen just the same as if they had a queen, so that it is impossible by watching at the entrances to say whether a queen is present or not.

In a week or two after becoming queenless the colony will have no brood to feed, and pollen will accumulate, so that it is common to find such a colony with an unusual store of pollen. When this occurs there will be a let-up in the gathering, so that after a time queenlessness may be recognized by the fact that small pellets of pollen are carried in while other colonies have large ones.

NECTAR WASTED.

Estimates as to the amount of nectar now out of range of sufficient bees to gather it have varied greatly, some thinking only half is saved, others only a twentieth. "In all the country," says Dr. Phillips, "there are few places where too many bees are kept, and it is doubtless conservative to venture an estimate that ten times the present honey crop could be produced with profit." The thought might occur, "If ten times the present amount of honey should be harvested, the immense supply would bring down the price so that beekeepers could not live." But if the output should be increased tenfold it would be consumed—at some price—honey would become a staple article of food, and in the end there might be a steadier price no lower than at present.

STORAGE CELLS.

At page 47 this: "The cells used in storing honey are usually of the larger size while pollen is ordinarily stored in worker-cells. The storage cells are less regular, and as a rule slope upward at the outer end." That would give to one knowing nothing about bees the impression that only a small part of the honey is stored in worker-cells. Is it not by far the larger part?

DEVELOPMENT OF THE QUEEN.

On page 102, 16 days is given at the time for the development of the queen. In the first volume of the American Bee Journal, page 199, the Baron of Berlepsch says that experiments he had made "show that the opinion generally entertained, that the queens emerge between the 17th and 18th day after the eggs are laid, is correct." In the same volume, page 226, Dzierzon says: "Seventeen days from the laying of the egg seem to be sufficient for the perfect development of a queen, provided the temperature is suitable and equable, and the brooding regularly continued." A little later 16 days was given as the time from the egg to the perfect queen. This stood until Cowan gave the time as 15 days.

It is not likely that within threescore years the bees should shorten the time from a little more than 17 days to 15. The difference may be accounted for by the probable fact that most of the observations were made upon queens reared in nuclei or weak colonies. Experiments made a few years ago in strong colonies by the writer showed that 15 days is nearer the mark than 16.

PROPOLIS AND TRAVEL-STAIN.

We are told, page 126, "The 'travel-stain' frequently seen on comb-honey is propolis. Heddon showed some years ago that bees do not deposit it on smooth surfaces." According to that the term "travel-stain" is a misnomer, which is undoubtedly correct, for the discoloration is not done by the feet of the bees, as was at one time supposed, but by their mouths. But is it always propolis? You can get plenty of "travel-stain" on a section newly built by allowing it to face a black brood-comb, which looks as if the discoloration in that case is due to bits of the black comb being carried over to the section.

That bees do not deposit propolis on smooth surfaces is hardly true in this locality. I've seen oodles of propolis on the smooth surface of a section, and I think also on glass.

BEES FINDING A MOVED HIVE.

"If the hive has been moved only a short distance they may soon find it by searching, but if it is moved several feet they may fail to find it." Page 178. That depends. When I had only one colony I moved it a rod and the bees found it readily. If I move a hive three feet in my present apiary, the bees are not likely to find it. In the first case they could not enter the wrong hive, as there was no other hive, and the bees would likely have found it if it had been moved three rods, but when other hives are on all sides the bees cannot distinguish, and will enter the hive nearest the old location.

HONEY BEST FOOD FOR BEES.

On page 241, Dr. Phillips says: "Beekeepers usually feel that it is cheaper to feed sugar syrup because of the higher market value of honey, but no food for bees better than honey has yet been found." Thanks to Dr. Phillips for that last statement, which might well have been put in Italics. To be sure, there may be exceptional cases, when the honey is objectionable, but good honey contains elements not to be found in sugar, especially the mineral elements, making it far superior to sugar for either man or bee.

BROOD-REARING BEFORE FLOW.

"If there are long intervals between honey-flows, the beekeeper must see that brood-rearing is at its best during a period of six or eight weeks before each flow." Page 263. If we count three weeks from the egg to the emerging worker, and 16 days more before going afield, that makes only two days more than five weeks; so six or eight weeks seems a bit long. But it may be none too long to begin the feeding, for the response by way of laying is not likely to be immediate, and it does no harm to be a little ahead. C. C. M.

MISCELLANEOUS NEWS ITEMS

Bees at the Minnesota Fair.—The beekeepers of Minnesota are setting an example to the world in their display of industry at the fair. This example is worth following by other States. The former president of the Minnesota Beekeepers' Association, Mr. P. J. Doll, sends us the following short statement concerning their apiary building:

We have an independent Apiary Department, a building about 70 by 140 feet, all for ourselves in which we have nothing but honey, bees and bee-supplies, and which was crowded for room.

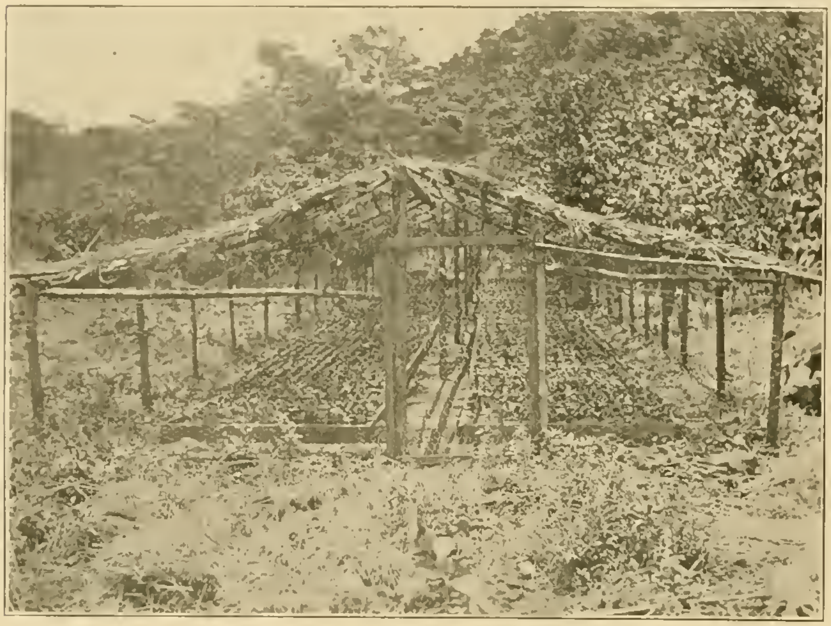
All honey displayed for premiums was in glass cases; $1168 was offered for premiums on honey, beeswax, and bees this year. Leading beekeepers of the State shipped in enough honey so we could keep an 8-frame honey-extractor running all the time, six days in the week. Besides the $1168 in premiums, the Fair Board has allowed more than $500 for other expenses in the way of extracting and demonstrating honey and bees. The Fair Board expressed themselves on a number of occasions as being very much pleased with our showing.

Our Bee and Honey Department was made big by the members all working together in harmony and for the good of the whole. P. J. Doll.

New York State Convention.—The New York State Association of Beekeepers' Societies will hold their annual convention on Dec. 7 and 8 in the Court House in Syracuse. This being a fairly good year in this State for honey, we expect a good attendance and a very pleasant and profitable meeting.

Be one of the crowd at Syracuse Dec. 7 and 8. Irving Kinyon, *Sec.*

Iowa Convention.—In our November number we published the program of the Iowa convention, which will be held at Des Moines Dec. 13, 14 and 15



A COFFEE-PLANT NURSERY

but we failed to state that the meeting will be held at the Commercial Club rooms, in the Shops Building. Iowa beekeepers should note the location to save difficulty in finding the place.

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Wisconsin Convention.—The Wisconsin convention will be held at the State Capitol at Madison on Dec. 9 and 10.

PROGRAM.

THURSDAY, DECEMBER 9.

The business meeting and appointment of committees.

Ten minute talks by F. J. Wells, Milton; A. S. Linn, Stoughton; W. R. Abbott, Ft. Atkinson; Frank Wilcox, Mauston; and A. C. Allen, Portage.

Question Box.

"How and Why I Paint Foundation"—Ed Hassinger, Greenville.

AFTERNOON SESSION.

"Foulbrood in Wisconsin"—N. E. France, State Inspector, Platteville.

"Why Were Bees Crawling in Front of the Hives?"—F. Kittinger, Caledonia.

"Beekeeping at Agricultural Colleges"—L. V. France, St. Paul, Minn.

"Queen-Rearing at the Wisconsin College"—C. W. Aeppler, Madison.

"State Recognition of Beekeeping"—Dean Russell, Madison.

EVENING SESSION.

"Extracted Honey Production"—A. Swahn, Ellsworth.

"Farming with 100 Colonies of Bees"—A. Pathe, of Malone.

"Stereopticon Views of Wisconsin Beekeeping"—L. V. France.

"Comb Honey Production"—E. R. Root, of Medina, Ohio.

"Marketing Honey"—C. P. Dadant, Ham-f ilton, Ill.

DECEMBER 10—MORNING SESSION.

"Selling Honey by Mail"—E. B. Rosa, o Monroe.

"Value of Young Queens"—N. E. France.

"Out-of-door Wintering"—Dr. E. F. Phillips, Washington, D. C.

"Wintering in Wisconsin"—Andrew Stevens, of Stockbridge.

In the afternoon those in attendance will visit the Agricultural College and apiary.

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Western New York Meeting.—The annual meeting of the Western New York Honey Producers' Association will be held at the American Hotel, Akron, N. Y., Dec. 14, beginning at 10 o'clock. An interesting program is being prepared. As the question-box is usually well patronized, it is requested that those having questions to ask will please send them in now, so that the proper men will be assigned to answer them. We expect to have some very good talent present to answer almost anything pertaining to bees, honey, etc.

It is desired to have each beekeeper bring his favorite package of honey, as well as labels, with facts relating thereto. Bring the honey anyway if you cannot bring the facts, for if each one will do this we will have a genuine assortment of sizes and discuss the possibility of establishing a uniform size, as well should to thoroughly coöperate.

Any beekeeper who has any new or useful device or appliance is requested to bring same and show its merits, as this is what we come together for to exchange ideas and to learn something new if possible.

Every beekeeper is invited to attend, is welcome, and is expected to help us make this the most interesting meeting ever. WILLIAM F. VOLLMER, *Sec.*

Akron, N. Y., Nov. 13.

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Seals for Honey Packages.—A certain firm that manufactures a corrugated fiber board box for shipping extracted honey have this interesting note:

"The resiliency of the material from which our boxes are made absorbs the shocks of transportation, and rough handling and the *seal prevents dishonest handlers from robbing the cans.*"

The emphasis is ours. In a recent shipment to the North, we found one entire 5-gallon can emptied, the contents all gone. As the cans used were all the single round cans, in stout wooden jackets, well braced and nailed, *no* damage was done to the *tin* of the can, but the screw cap must have been removed and the honey "extracted" a *second time!* Of course we have put in a claim, but claims are often unsatisfactory, *always* tedious. Who likes railroad claims anyhow? If the *seal* alluded to above will do the thing, let's have *all* our extracted honey retainers *sealed* for shipment. Why not a good idea.—E. G. B.—*Beekeepers' Review*

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Eastern Massachusetts Society of Beekeepers.—The Eastern Massachusetts Society of Beekeepers will hold a meeting on the first Saturday of every month at 4 p.m., beginning with October and ceasing with April.

The speaker for December is Dr.

BUILDING A MOUNTAIN ROAD IN PORTO RICO

Burton N. Gates, who will speak on "Efficiency Among Beekeepers." The speakers for the other meetings: January, Mr. Allen Latham; February, Mr. S. S. Crossman; March, Mr. M. Lothrop Davenport. and for April Mr. F. E. Smith, Director of the Independent Agricultural School at Hawthorne.

BENJAMIN P. SANDS, *Sec.*
Boston, Mass., Nov. 15.

The Minnesota Beekeepers' Association will hold their annual convention on Tuesday and Wednesday, Dec. 7 and 8, 1915, at University Farm, Agricultural Chemistry Building, Room 251. The Tuesday evening meeting will be held in the Assembly Room of the Administration Building at 6:45 p.m. sharp.

TUESDAY FORENOON—9:00 A.M.

Social hall hour. Business meeting.
"Report of Inspector of Apiaries"—Chas. D. Blaker.
"Treatment of American Foulbrood"—Prof. C. D. Siehl.
Discussion.

TUESDAY AFTERNOON—2:00 P.M.

Address—A. F. Woods, Dean of Minnesota Agricultural College.
"Beekeeping at the Minnesota Agricultural College"—Prof. Francis Jager.
"Report on Queen-Rearing at the Minnesota Agricultural College"—Prof. L. V. France.
"The Evolution of the Beehive"—Dr. L. D. Leonard and C. P. Dadant, Editor American Bee Journal, Hamilton, Ill.

TUESDAY EVENING—6:45 P.M.

Popular meeting with stereopticon views and motion pictures of certain phases of beekeeping—E. R. Root and Dr. E. F. Phillips and others from outside of the State.

WEDNESDAY FORENOON—9:00 A.M.

"Production of Comb and Extracted Honey in the Same Hive"—J. J. Kadletz, of Chatfield.
"Outdoor Wintering"—Dr. E. F. Phillips, In Charge of Bee-Culture Investigations, United States Department of Agriculture, Washington, D. C.
"Cellar Wintering"—E. R. Root, Editor of Gleanings in Bee Culture, Medina, Ohio.

WEDNESDAY AFTERNOON—2:00 P.M.

"Report of Bee and Honey Exhibits at the State Fair"—P. J. Doll, Superintendent.
"Production of Comb Honey"—Jos. Finstad, St. Paul.
"Production of Extracted Honey"—H. J. Gluen, Harmony.
"Spring Management"—L. F. Sampson, of Excelsior.
"Last Year's Experience with Bees"—E. F. Halden, of Mound.
Election of officers.

The Relief Fund.—The following contributions to the fund for relief of Louis Werner, of Edwardsville, Ill., who lost most of his property by flood, have been received to date:

R. G. Jordan, Chenoa, Ill	$ 2.00
Walter C. Bennett, Frankfort, N. Y.	1.00
Frank Snyder, Cedar Rapids, Iowa.	1.13
R. B. Ross, Jr., Westmount, Quebec	2 00
A. Augenstein, Dakota, Ill	1.00
Geo M. Huntington, Bishop, Calif.	1.00
H. M. Debrodt, Hicksville, N Y.	1.00
John G. Miller, Corpus Christi, Tex.	5.00
American Bee Journal	20.00

Acknowledgment.—Our thanks are due to the beekeepers in attendance at the Hamilton meet of Sept. 7, for an artistically framed photograph of that meeting, donated to the Dadant family. It is the same photo as represented on page 342-3 of the October number, but is of full size, 3 feet in length by 1 foot in height. The frame is hand-carved, finished in beautiful bronze, and as we understand was secured by subscription of the beekeepers present through the efforts of our old friend, Mr. N. E. France. It is now hanging in the editorial room of the American Bee Journal and we are very proud of it.

Kentucky Meeting.—We notice the announcement that the Kentucky State Beekeepers' Association will meet at Lexington during Farmers' Week, which starts Jan. 4. Several other associations will meet at the same time and a large attendance is expected.

Bee Meetings Fall in Succession.—According to the pre-arranged schedule announced in our July issue, most of the bee meetings of the middle States have been so arranged that they fall in succession. This will give an opportunity for some of the beekeepers to attend several meetings at a very nominal cost. Following is a list to date of the meetings as they will occur:

1. Kansas, Topeka, Dec. 1, 2.
2. Minnesota, University Farm, St. Paul, Dec. 7, 8.
3. Wisconsin, Madison, Dec. 9, 10.
4. Indiana, Indianapolis State House, Dec. 10, 11.
5. Iowa, Des Moines, Dec. 13, 14, 15.
6. Michigan, Grand Rapids, Dec. 15, 16.
7. Chicago - Northwestern, Chicago, Dec. 17, 18.
8. Missouri, Columbia, Jan. 3, 4.

Michigan to Celebrate.—The oldest State Beekeepers' Association, Michigan, will celebrate its 50th annual meeting on Dec. 15 and 16, at the Eagle Hotel, Grand Rapids.

This 50th meeting will be unique in many ways. The beekeepers will enjoy a banquet supper, the gift of Messrs. G. B. Lewis, of Watertown, Wis., and A. G. Woodman, Grand Rapids. This will be at 7:45 p.m. on the 15th, and a large number is expected to be present.

To commemorate the 50th anniversary meeting, the association is providing medals, as sweepstakes, for the best exhibits of bee-products. Three medals will be put up. A gold medal, subscribed for by the American bee-supply manufacturers; a silver medal, subscribed for by the Michigan jobbers in bee-supplies; and a bronze medal by the association. These medals will be for the three best exhibits, and must be won three times to become the property of the exhibitor.

The gold medal will be valued at $50 or higher, the silver medal $20, so that the exhibitors will have something worth striving for if they are successful in showing a winning exhibit. The medals will be hexagonal in shape and bear an appropriate design. As the competition is open to all members of the Michigan beekeepers' association, we shall be pleased to furnish full particulars of the classes to any beekeeper. Class premiums will also be given.

Besides the banquet and medals, there will be an excellent program, this will be international in character, and includes some of the best known men in the beekeeping world. A glance at the program will show the beekeepers that here is an opportunity to meet with these men that may not occur again for many years, and one that it would be a folly to miss.

The headquarters and place of meeting will be the Eagle Hotel. This hotel has been the headquarters of previous meetings, and is centrally located. It can be reached as follows:

From Lake Shore and New York depots take Butterworth and Monroe car to door. From Kalamazoo or Holland interurban, go half a block to Monroe avenue, then three blocks to Market avenue and hotel. From Muskegon interurban, alight at Monroe and Market avenues and walk; half a block to hotel. From Union depot, hotel is three blocks north to Louis street, then two blocks west.

Rates are $1.00 and up per night, two in room $1.50 and up.

This year the Northern Michigan Beekeepers' Association are going to meet with us. The Northern members should note this and come down in a body. Write Ira D. Bartlett, East Jordan, for particulars.

The program, not quite complete, is as follows:

PROGRAM.

WEDNESDAY, DEC. 15.

Opening session 10:30 a.m.
Minutes of last meeting by the secretary-treasurer.
President's Address—Mr. David Running, Flint, Mich.
Report of the delegate to the National Convention at Denver, Colo—Mr. F. Eric Millen, East Lansing.
1:00—Appointment of committees.
"Running Outyards for Extracted Honey"—Mr. E. D. Townsend, Northstar.
"Notes from the Year's Work"—Mr. Morley Pettit, Provincial Apiarist, Guelph, Ont.
"Size of the Brood-Chamber"—Mr. C. P. Dadant, Editor American Bee Journal, Hamilton, Ill.
"Phases of Queen-Breeding"—Prof. J. H. Haughey, Berrien Springs.
"Transferring Bees"—Mr. A. H. Guernsey, Ionia.
Question Box—Mr. C. F. Smith, Cheboygan.
7:45 p.m.—Banquet Supper—Gift by Messrs. G. B. Lewis, Watertown, Wis., and A. G. Woodman, Grand Rapids.
"Some Lessons of the Last Half Century"—Dr. E. F. Phillips, Washington, D. C.
"Beekeeping as a Prison Industry and its Reformative Influence"—Mr. O. H. L. Wernicke, Chairman of the Jackson State Prison Board of Control, Grand Rapids.

THURSDAY, DEC. 16—8:00 A.M.

Demonstration in Bottling Honey—Messrs. A. G. Woodman's Factory, 9:00 a.m.
Demonstration in Assembling Bee-Supplies—Messrs. A. G. Woodman Co.
"Business Principles and System a Big Asset in the Success of the Apiarist—Mr. Ira D. Bartlett, East Jordan.
"Which Should Beekeepers Produce, Extracted or Comb Honey?—Mr. E. R. Root, Editor Gleanings in Bee Culture, Medina, O.
"What an Inspector Sees"—Mr. F. Eric Millen.
Question Box—Mr. C. F. Smith.
Group Photograph.
1:00 p.m.—"Outdoor Wintering"—Dr. E. F. Phillips.
"Bee Business in Canada as Seen by a Trip Through Different Provinces"—Mr. Morley Pettit.
Reports of committees.
Awarding medals.
Election of officers.

F. ERIC MILLEN, *Sec.-Treas.*
East Lansing, Mich.

Wanted—Back Numbera of the Bee Journal.—We are in need of back numbers of the Bee Journal to supply requests for full sets. Our readers who have back numbers will confer a favor by writing us with full information as to the dates of all copies which they can supply and which they are willing to sell. Some especially needed immediately are listed in a classified advertisement in this number. When writing please give a list of what you have.

BEE-KEEPING FOR WOMEN

Conducted by Miss Emma M. Wilson, Marengo, Ill.

Basswood Seedlings

On page 372, propagating basswoods is discussed, a subject in which women should be interested as much as men. There are practically no basswoods growing wild about Marengo, but we have a beautiful row of them growing on the place. Under this row thousands of seedlings come up every year from the seed that is bountifully produced. They never, however, appear the second year. They are not pastured down, and what becomes of them is a mystery. But there is a bountiful crop of fresh seedlings every year, so that the germination of the seed does not seem such a difficult thing. It is quite possible that the seed lies on or in the ground over a year, coming up the second spring after it has fallen.

If this supposition be correct, then it seems that the proper thing would be to plant the seed where it may lie in the ground over one summer. In many cases it would be undesirable to have the ground thus occupied, that is to have the seed planted where it is to remain permanently, and this might answer: In the fall, or as soon as the seed ripens and falls, gather it and bury it in the ground in a mass; then after having remained thus buried during two winters and a summer, it may be taken up in the spring and planted. Canna seeds are difficult to start on account of their hard shell, and sometimes a hole is filed into each seed. Gladiolus cormels have a hard shell which is sometimes peeled off with scarce sorts. It would hardly be practicable either to file or to peel basswood seeds, although they might be lightly cracked; but another thing might be done with them that is practised with both canna seeds and gladiolus cormels, that is to pour boiling water upon them. This seems all the more plausible from what is said on page 369, about immersing sulla seed in boiling water for five minutes.

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Fall Treatment of American Foulbrood

In an item on page 376, when speaking of the intended treatment of American foulbrood, it is said, "They are to be left until they have no longer any unsealed brood. Then their frames are to be taken from them (not burned) and replaced by combs of sealed honey, and that's all the treatment they are to have." How that "not burned" got there is a mystery. Did it so appear in the manuscript, or did the "intelligent compositor" take liberties with the copy? Anyhow, that "not" should be changed "to be" or something else to show that those frames were to be burned into a very burnt condition.

Now that the treatment has been applied, and is no longer a thing in prospect, it may be well to say particularly how it was done. Another hive was provided with combs of sealed honey—an abundant supply for winter and spring—and set in place of the old hive, the latter being of course set off the stand. On top of the yet beeless hive on the stand was placed an empty hive-body. The combs with adhering bees are now lifted one by one from the old hive, and the bees brushed into the empty hive-body upon the combs of honey. Very simple, yet just as safe as the usual plan of shaking while there is a full quota of brood in all stages in the hive. For there is no diseased honey in the hive, and what honey the bees have brought in their sacs will be all used up long before brood is again in the hive. The combs taken away are to be burned after the honey is extracted from them. With any considerable quantity it might pay to melt the combs and save the wax.

In this method of treatment, a method given by the late W. E. McEvoy, there is no hindrance to the work of the bees, while the usual shaking method is a serious setback. Of course there is the loss of the combs in either case. While it would not be advisable to delay treatment when a colony is found diseased early in the season, it would seem quite advisable to wait until there is no longer any brood in the hive when the disease is found late in the season.

Good as the plan is, it is not one of universal application. Mr. Le Sturgeon, of San Antonio, Tex., says that he has never found a time in the year when there was not at least a little brood in his hives. The plan is therefore barred from those far enough South to have no broodless period.

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Bottom-Starters in Sections

Bottom-starters in sections, which originated "in this locality," seem to be growing constantly in favor, and as there is more or less misunderstanding about them, it may be well to give here some particulars. More than one otherwise good authority has advised to use bottom-starters ¼-inch deep. The conductor of this department has probably put in bottom-starters for a longer time than any other beekeeper aside from Dr. Miller, and does not hesitate to say that the one who advises so small a starter as ¼-inch is hardly speaking from much experience.

Foundation is probably fastened in sections most generally by the hot-plate machine, the one most commonly in use being the Daisy fastener. With this machine it is so difficult to put in so narrow a starter as to be well nigh impossible. A ⅜ starter is much more easily managed, but still very troublesome. With a ⅝ starter the work may be done very rapidly.

But the ease of putting in the starter is not the only thing to be considered. If it were, a 2-inch starter would be better than a smaller one, but a 2-inch starter would not do at all, for it would promptly topple over when given to the bees. Much experience has shown

Orange County Bee Exhibit
WELL CASING

ORANGE COUNTY EXHIBIT

that ⅝ is about as great depth as may be used and have the starter stand up well.

But suppose the difficulty of putting in the smaller starter could be overcome, is there any objection to it otherwise? There is. The bees seem inclined to the notion that there should be a passage between the bottom bar and the foundation, and if the bottom-starter is too narrow, and business is a little slack, they proceed to tear down a deeper starter. With a top-starter 3¼ inches deep and a ⅝ bottom-starter, and a section 4 inches deep in the clear, there should be between the two starters a space of ⅛ inch. In actual practice the space is likely to be a little more than that, because the hot plate melts away just a little of the edge of the foundation. When a section is given to the bees, they seem to make it their first business to fasten together the edges of the two starters, thus securing the lower starter against the danger of toppling over.

All this is with the understanding that thin super foundation is used. With extra-thin the result might be different, and for those who prefer extra-thin it might be best to use, at least for the lower starters, thin foundation.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

No Wintering Problem in California

In California of course there is no wintering problem, as it is understood in the East. That is, there needs to be no preparation for guarding against extreme cold. But our winter is a period of comparative rest for the bees, though they may and do fly on all sunshiny days, unless hindered by a hard wind. We do not expect them to gather stores at this season From Nov. 1 to Feb. 1 there is very little brood-rearing, and consequently there is less honey consumed than at any other period.

It is time now to lift your hives and see that none are too light to have sufficient food supplies, for, while the less the bees are disturbed now the the better, still they must not be neglected. If some are short of stores, I prefer to take a few frames of honey from a colony that is heavy and can well spare it to beginning to feed now. That is, where the apiary is known to be perfectly healthy. Of course, feed if need be, and any of the well-established methods of feeding will answer, though they will have their deficiencies.

Bee-feeding is not as yet a fine art, but there are many fairly good methods. When lifting your hives to test their weight, be sure and mark them on the front in some simple manner and keep a record so as to make your work systematic. If one becomes too weak, take off the super of emptv combs, which is here usually left over the brood-chamber, for they are better in closer quarters to conserve their warmth. Put your super over the super of a strong colony to save your combs. This leaving of the supers on is usually done here to preserve the empty combs, also in case of a late honey flow after extracting; the bees may need them. By a careful and simple system of marking, one is enabled to see at a glance the condition of the hive when last examined. All hives should be set a few inches above the ground to keep them away from the dampness in winter and spring.

A wooden frame for setting the hive on will answer, but where one has a permanent location it pays better by far to make a cement foundation for each hive. In the sage belt we are always in the hills; and where practical, the ideal setting for the apiary is a gentle slope with a southern exposure. With the extracting house in the foreground, this gives convenience in handling the honey, and the southern exposure gives early sun for the bees. Where the empty combs are left on, a good strong colony will keep them free from moths. The main thing is to guard against the presence of too much moisture in winter, as this causes mold in the outside combs of the brood-chamber. Should this occur, such combs should be removed and good combs put in their place. The moldy combs should be put in some dry place, as they can be saved usually for next season. Combs containing much pollen are most liable to mold.

Before hard winds occur in the fall, hives should be weighted with stones on covers to prevent their being blown off. This, however, is one of the most characteristic sights in a California apiary. Sometimes an inspector will find a 30 or 40 pound rock on a hive. This is a little more weight than necessary. But rocks are always handy and cost nothing; they keep things in shape in the outapiary which sometimes is not visited for weeks.

Attention should be given the hives, to see that they are in proper condition for winter, as a leaky or badly warped cover may cause a lot of trouble. It pays also to keep the hives well painted, in profit as well as in neatness of appearance.

One of the menaces of the mountain apiary is the little spotted skunk which is so numerous here. They do not need any "Eat Honey" stickers on their mail, as they already have the habit developed. They go to the front of a beehive and scratch, and some say tap on the hive with their tail to arouse the bees, catching and eating them, as they come out to see what is the matter. They frequent the hives near dusk in the evening and, unless something is done to diminish their numbers, do considerable damage, often weakening a colony so that it is easily robbed out. Perhaps the easiest and surest way of reaching them is to put a poisoned egg near the entrance of the hive in some small tin so that it cannot be overturned. The skunk is said to eat the bee for the honey contained in her honey-sac.

These suggestions and precautions are made especially for the beginner, and those of small experience, as of course all these details are but an old story to the experienced bee-man. But it cannot be too strongly impressed upon the beginner that the necessity of taking his bees through the winter in good condition means having them in proper shape to strengthen up for the honey flow in the spring, and that eternal vigilance is the price of success.

[The skunk is fond of all kinds of insects, and eats large quantities of grasshoppers, beetles, etc. It also eats honey readily if within reach.—ED.]

Our Exhibit

The Orange County Beekeepers' Club made a nice little exhibit at the Orange County Fair in October. Mr. George J. Brown, one of our youngest but most energetic members, was placed in charge, and the exhibit he made with the assistance of Messrs. Rails, Holbrook and Joplin, was a credit to any fair. He displayed an 8-frame Root reversible extractor run by an engine, and the practical manipulation of uncapping and extracting honey was shown to the public.

Mr. Rails, one of the queen breeders, had on exhibition a number of queens and nuclei which were of much interest, as were Mr. Brown's glass hives. The photograph shows the exhibit with Mr. Rails and the writer in the stand, Mr Brown wielding the camera. Incidentally, Mr. Brown sold a carload of honey while running the exhibit.

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Near 4000 Colony Mark

The past season we came near reaching the 4000 colony mark. Notwithstanding we never made that mark our aim, but just planned for a moderate increase at most apiaries, while at a few we made heavy increase, as it was needed in order to bring the apiaries up to a profitable number.

We have never found it best to stop all increase, for we can actually make more honey at a 10 percent increase, and at the same time more easily keep down swarming. Besides we would hate to see the time when our business would be on a standstill, for we want to move it up at least some each season.

We did not produce as much honey this season as we usually do, yet our business was never in as good shape as it is at present; more honey on the hives for stores, and colonies stronger. Besides, this being one year for general requeening, we have headed over 2500 colonies with young queens from our good Caucasian stock. This means a great season for next year.

Supers Too Shallow

Comb-honey supers as sent out by our bee-supply manufacturers are not deep enough for the sections and the proper space above them. The covers rest too closely, and as a result, in removing them, the tops of a number of sections are at the same time removed, sticking fast to the cover, spoiling the supers of honey or sections. This is disgusting to the comb-honey producers, and of late they are making a great "kick." If they can't get deeper supers they will abandon comb-honey production or make their own super-bodies, as many are now doing.

I do not know that this is true in the North, but it is generally true in the South. The white pine sent to this southern climate gradually shrinks, especially with hundreds of these in use, and all of them are too shallow. For a number of years I have had my comb-honey supers made ⅛-inch deeper than the factories make them, and even then in a season or so they have reduced in depth until they are too shallow, even painting does not overcome this shrinkage, and the only solution to this is a material that will stand this climate and will not shrink. For this purpose we have not found anything that is quite so good as well seasoned cypress lumber which can be obtained from any of the great cypress mills in the South.

[From our experience with lumber, we have found cypress to swell and shrink fully as much as white pine. We believe the heat of the southern skies must be responsible for some of this trouble. It is also probable that your bees use propolis more freely than ours during harvest. We would suggest trying a thin muslin over the sections, when a cover is to be used over the super. Of course it would not do if tiers of supers are used one above the other.—EDITOR.]

When Starters are Best in Sections

It is commonly recommended to use full sheets of foundation in sections, and this is good advice as a rule, but it is not always best, especially in the great cotton belt and in most sections along our coast country, where the honey in its best finished state is rarely thick enough in the extracted form because the bees store faster than they can evaporate in ready-built combs; while if they built the combs from a narrow starter the course of evapora- ld be slower and more thorough, and the same source of nectar would give us a honey with a good thick body and milder flavor and no signs of fermenting or "weeping." Under this condition it is best to use only starters.

I visited an extensive beekeeper during the flow from cotton, who was producing comb honey in the regular shallow extracting supers, and I was a little surprised to find that he was only using very narrow starters in the frames, and he remarked, "I would not use full sheets of foundation during this flow if the foundation came free." For the sake of having some extracted honey he was using some old ready-built combs and a few supers at the home-yard, and had full sheets of foundation in the frames. The bees were drawing out the foundation and building comb at a very rapid rate. He remarked, as we examined them, that this was too much progress for a good article of honey from this source; while in the supers where starters were used, comb building was not near so rapid, and the honey was finished up in the frames "blunt."

After sampling the finished articles from the supers containing ready-built combs, full sheets of foundation and starters, the quality was found to be far superior in the latter. If the same honey stored in the ready-built combs is left on the hives until late in the season it may have a little heavier body than if extracted at the close of the flow, but there is not much improvement in the flavor. It will be some darker and taste a little sour; bubbles will be seen in the cells all through the honey as well as a great amount of bulged cappings, etc.

CANADIAN BEEDOM

Conducted by J. L. BYER, Mt. Joy, Ontario.

The Season

The old-time saying that one extreme generally follows another, seems to be verified again in the matter of weather conditions in Ontario. After a very cool summer, much of the time very wet, we have for the past month been treated to beautiful weather with almost no frost to date—Nov. 10. Very little rain during this period of sunshine, but no harm is done as the precipitation was abnormally heavy earlier, and the land is still full of moisture; indeed, nothing will suffer if we get little rain this fall.

This fine weather has been ideal for late feeding or other postponed bee-work, and there can be no excuse for neglect in these lines. We certainly have had lots of time to do the work. Bees are going into winter quarters in fine condition, so with normal weather for the winter, good wintering should be assured.

Dr. Phillip's Book—Overproduction of Honey

According to an editorial on page 367, Dr. Phillips in his recently issued book on beekeeping, says that there is no present likelihood of overproduction of honey. While he no doubt refers to the United States, as conditions are in many ways identical in the United States as they are with us, no doubt I will be excused for taking liberties. Frankly, I believe that there are scores of beekeepers in the United States who will take issue with Dr. Phillips on this question, and I am positive that there are lots of beekeepers in Ontario who will do the same. Yes, I know the old time arguments of educating the people to eat more honey, to create more demand, etc., will be used again in answering such claims, but the older I get the more absurd it seems to me to boost the production of honey in advance of a profitable demand for the same.

When Mr. Achord, of Alabama, was at Toronto last September, we had the pleasure of a few moments' conversation with him (all too short by the way), and one of the few things I remember of the interview was the statement that he could not get more than 3½ cents per pound for good amber honey. From California comes the same lament, and judging by letters from other parts of the States, which I have received lately, many, many beekeepers think that there is quite enough honey being produced in the United States for present needs. Things are a little better in Canada at present (thanks to the unnatural law of protection), and yet we have certain boosters who would seemingly be glad to increase production so that the demand would certainly be below the available supply. Increase the *demand* for honey, the supply will take care of itself. Too long we have worked at the wrong end of the problem, and surely it requires but little logic to see the fallacy of such a procedure.

[While we do not think it profitable to continually bring the subject before our readers, we feel that Mr. Byers' conclusions need some comment on how to increase the demand.

It is very apparent to everybody that honey is not growing in use with the increase of population. As mentioned in our article on "Food Value of Honey", the use of honey was once almost universal. Now but a small portion of the people use it, and the proportion instead of growing larger is constanly growing smaller.

Butter has been kept before the public by the representatives of the dairy industry in agricultural colleges and elsewhere. Oleomargarine looks and tastes so much like butter that many people cannot tell the difference, yet it is little used. The reason is that its inferior qualities were brought to the attention of the public by these college representatives and other organizations who had the interest of the dairy industry at heart. As a result the public has formed a prejudice against it and refuses to accept a substitute for butter.

If there had been an apiary department in every agricultural college when substitutes began to be offered for honey, instead of a small percent of the population eating honey as now, 90 percent would demand it and refuse to be satisfied with a cheap and inferior substitute.

Our educational institutions today largely determine what our ways of thinking and habits of life will be tomorrow. Unless the honey-producing business has representatives at headquarters, our interests will not be kept before the public and the demand for our product will be supplied by those who are able to meet the changing conditions of our time.

It was the official representatives that called to public attention the inferiority of oleomargarine to butter and created a sentiment that refused to be satisfied with a substitute for the latter product. Had the same fight been made against substitutes for honey, the general public would not need be told that the cheap corn syrups are inferior to the product of the hive.

When the demand declines, for a product which is not only of the highest quality, but is at the same time one of the cheapest foods on the market, as analysis shows honey to be, it is time for the honey-producers to rub their eyes and wake up. The trouble is not a lack of demand, but because of lack of business methods on the part of the beekeeper, the demand is met with something else.—Editor.]

Dr. Phillips on Evolution

So Dr. Phillips believes in evolution page 368 of the American Bee Journal. Well, we would hardly expect anything else, for it would be almost "bad form" for a scientist to express any other belief. But for all that, some of us old-fashioned clodhoppers — the writer among them—will continue to believe that God gave man dominion over all the lower animal kingdom, the bees included, and firmly believe that the latter were exactly as they are now many thousands of years ago. One of the things always inexplicable to me has been the fact that none of Darwin's followers can tell us just when development of certain things ceased. But enough of this, the first thing I know I will stir up a hornet's-nest and be getting into all sorts of trouble.

American and European Foulbrood

Looking over the last number of the American Bee Journal I was impressed with the thought that no matter how much we would like to get away from the word "foulbrood," our old-time friend will not be downed. In this November issue we have leading articles on this subject from California, Colorado, Illinois, Vermont and New York—maybe I have overlooked some at that. Reading all this matter, two things impress themselves on our mind personally, and they are as follows:

We dread European foulbrood more than ever, and contrary to what Dr. Miller's sentiments seem to be, we have more or less contempt for American foulbrood. Perhaps the word "contempt" is ill chosen, but at any rate we do not dread this disease. Dr. Miller speaks of the latter disease as not traveling fast, instancing the fact that while they have just found it in their apiary, it has been known to be within 12 miles of Marengo four or five years ago. Why, it has been within at least four miles of my Cashel yard for ten years or more, and never was a case discovered there. At other yards we have found one or two isolated cases every year or two, and yet we have never had any outbreak. Could we have said the same of European foulbrood under like circumstances?

Of course American foulbrood requires prompt and radical treatment, but there is the satisfaction of *knowing* that the disease is only transmitted by robbing or in some other way of mixing combs of honey from infected colonies to healthy ones, on the part of the beekeepers.

What we *know* about the other type of the disease is mostly of a negative quantity and quality seemingly, for after Dr. Miller's encouraging reports it gives one a chill to read what Wesley Foster says. Truly, we have much to learn about European foulbrood yet, and I frankly confess that I would rather find half a dozen cases of American foulbrood in each of our several yards next spring than to find a single colony affected with European foulbrood.

The Great Clay Belt of Ontario

That picture of a northern apiary near Haileybury, Ont., revives my old notion of thinking that we would like to have a lot of bees in that country. A number of years ago a trip was made up there, and I well remember the thousands and thousands of acres covered with willow-herb and smaller areas of alsike, white clover, raspberry, etc. This locality is what is known as the great clay belt of Ontario, and is about 400 miles north of Toronto. The apiary we often refer to as our north yard, is but 100 miles north of that city, so we are really in the south of Ontario when the vastness of the province is taken into consideration.

CONTRIBUTED ARTICLES~

Bees at Washington Fair

BY J. W. WARE.

When first we came to western Washington, beekeeping was hardly known as an industry. An agricultural fair had been established, and looking over the premium list we found listed one pound of honey and one pound of beeswax with a cash prize of 25 cents each. This did not look good, so we arranged a one-frame glass hive and made a display from the top of a dry goods box. This attracted much attention, and was the means of starting a bee department at the fair, which was given an 8 by 10 shack to start with. This was filled, and each succeeding season we enlarged the exhibits until we now fill a 75 foot building.

We feel a great deal of pride in the success we have attained. That one-frame observation hive proved from the start that live bees are an attraction. We have kept it going until we now have from six to eight one-frame and from two to three full glass hives, and two to six full colonies competing. One or more demonstrations given each day at 4 p.m. have proved to be one of the very best leaders at the fair. The demonstrations consist of opening a full hive, finding and exhibiting queen on comb, and queen clipping contests. The performances are given in the open to interested crowds without protection of any kind.

The bees give no bother, as they are baptized with warm water about 20 minutes before time to open, though if kept closed up for three days they are so conditioned that they need but little of "John the Baptist." Our honey exhibits are the best ever, so say the visitors.

All this costs time and effort, for which we are paid by the pleasure we get out of a first-class show. This past season has been one of the very poorest we have experienced on this coast.

Puyallup, Wash.

A Winter-Case for 20 Cents

BY ED SWENSEN.

I am sending three photographs of my winter-cases. Number 1 shows the hive in place, and the space for packing, which is about 6 inches, on top. Number 2 shows the case with cover on, as it looks when packed for winter. Number 3 shows 34 colonies packed for winter. I might add that they are also packed for spring, as it is just as necessary to have them protected in the spring as in the winter.

My bees were gathering pollen today (Nov. 11, 1914), which I don't think they would have done if they had not been packed, as the nights are so cold that where they were left without winter-cases it took the bees about all day to warm up so they would come out. Not so with the ones packed; they were out just as soon as it warmed up enough so the bees could fly. I use planer shavings for packing. I generally put some forest leaves in first, so in case there would be some openings around the bottom the shavings wouldn't leak out. I buy boxes at the grocery store for 10 cents apiece (cover and all). They are just the right size the way they are. I cover this with one-ply roofing. These covers I shall use as a shade-board in the summer, as they are plenty large for that purpose. These boxes cost me finished about 20 cents, not figuring labor.

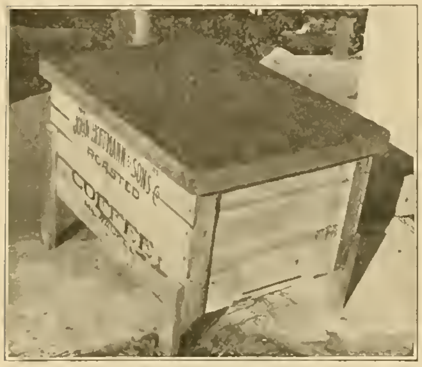


FIG. 2.—SWENSEN'S 20-CENT PACKING CASE COMPLETE

Spring Valley, Minn.

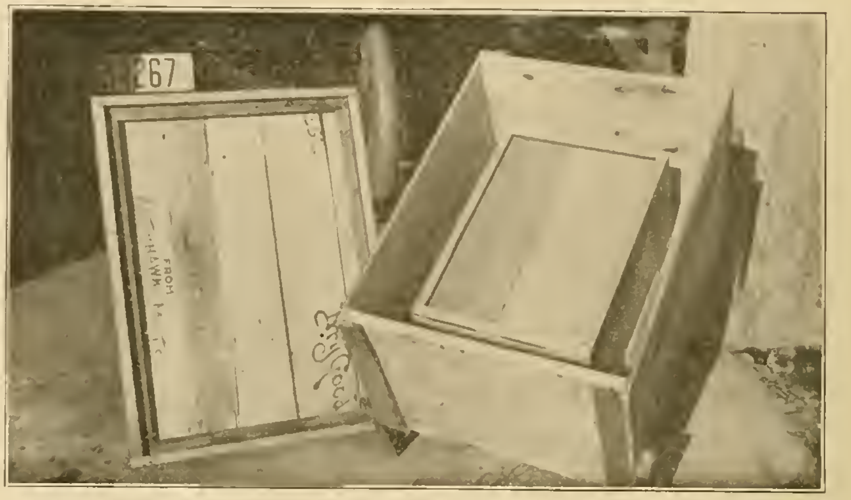


FIG 1.—WINTER CASE USED BY ED SWENSEN, OF SPRING VALLEY, MINN.

Outdoor Wintering in Northern States

O. H. L. WERNICKE.

The art of wintering bees successfully presents problems involving all the other problems relating to the industry, for unless the bees are successfully wintered, all other work of the apiarist is useless.

Among northern beekeepers cellar wintering is generally regarded as the safer and better method. Double-walled hives and other forms of outdoor protection have their numerous advocates and are employed with varying results according to local conditions and the degree of care and intelligence exercised by the beekeeper.

That bees do freeze cannot be disputed, but it is equally true that winter losses are often due to other causes than cold. Aside from insufficient stores, bad air and the consequences of long confinement are responsible for more failures than cold. It is astonishing how bees will resist long periods of intense cold when the supplies of food and good air are not wanting. Of equal importance to the food supply is its accessibility, for, unless the bees can avail themselves of the food, it might as well be absent.

When bees go into winter condition they cluster; it is their method of keeping warm. The cluster usually forms below their stores near the forward center of the hive and moves upwards as they consume their food supply. If the cluster were started at the top, the lower stores would be in a colder zone and not available; the bees would then die of cold induced by starvation—close to a plentiful food supply.

It may be safely assumed that a strong colony is quite capable of generating sufficient warmth for its own preservation under almost any condition of outer temperature, if it is not allowed to escape too freely. An unprotected boiler—exposed to winter winds and cold—requires a much greater fuel consumption to maintain a given steam pressure than if properly covered with a good insulating material. Losses by radiation are a waste at the expense of fuel and energy, and in a colony of bees such needless losses not only require the greater consumption of stores, but also a far greater physical activity on the part of the bees, which takes their vitality and shortens their lives. It is clear then that the main problem when wintering bees out-of-doors is to conserve the warmth which they generate. Whether this result be obtained in a cellar or by any other form of protection matters little, the question resolves itself into one of adequate insulation to prevent the too rapid loss of the natural warmth which the bees themselves supply.

It is a well known principle that the closer the insulating agent is brought into contact with the source of heat the more effective it becomes. It requires fewer heat units to maintain a given temperature in one cubic foot of space than in two.

When preparing bees for the winter, a matter of prime importance is the provision of ample space for dead bees and circulation of air below the frames. Two inches is none too much; less than one inch is positively inadequate. The hive openings should be not less than five square inches in area, and more is preferable.

Most beekeepers understand that hives for outdoor wintering should be provided with ample top covering of some absorbent material, chaff, straw, excelsior, shavings, leaves, old quilts, carpets or the like; use too much rather than too little.

The successful wintering of bees depends upon adequate insulation to conserve the heat which they produce, an accessible supply of food, good air, and absence of moisture. When these conditions are insured, bees may be wintered out-of-doors as well and often better than in a cellar. Such colonies build up earlier in the spring and produce more surplus honey than after cellar wintering; the cleansing flights are a big factor in preserving the health and vigor of the bees.

The writer's own preference favors the 8 frame 2-story hive because the food stores and brood areas are greater and less spread out. The form of this hive with its greater bulk of stores above the cluster more closely approximates the bee-tree; it also brings the stores more closely into the zone through which the cluster moves upwards and therefore more accessible. During the cold weather the bees will not go far from the cluster for food, as they would become chilled. The food stored at the sides is often too cold to be secured.

The high insulating value of paper is well known, but not generally appreciated. We all know how paper-lined clothing protects against wind and cold. It does this by keeping the heat in; for if we do not let the heat out the cold can't come in. It's the same with a colony of bees.

To prepare a colony for outside wintering, the bottom-board or stand should be banked sufficiently to prevent drafts under the hive; then see that the opening and the space below the frames is adequate.

An empty hive-body with a piece of carpet or burlap stretched over one opening and tacked to the outside and well filled with chaff, straw or the like makes a splendid cover.

Another method is to fix a queen-excluding board to this hive-body in place of carpet or burlap. This may be done by using ordinary hive staples. When the excluder-board is used it should be covered with a cloth to prevent fine particles of the chaff or other material from sifting on to the combs. The writer prefers to use cloth, burlap or old carpet, both over and under the chaff, with edges tucked in between hive-walls and chaff; this makes a neat job.

There should also be room between the top of the frames and this cover, for the bees to cross over from one comb to another. When cold, they will not readily go downwards to get on the other side after food, but will do so when top cross-overs are provided. When the carpet or burlap is placed next to the comb frames, a couple of 5-16 or ⅜ inch sticks laid crosswise of the frames will insure against cutting off the beeway, which may occur from sagging of the material.

Having made the top and bottom of the hive shipshape, cover the outside with building paper, strawboard or the like; this will not cost more than a few cents per hive and may be used year after year. This paper covering should be of good thickness, one-quarter inch is good, but a half-inch is better; this can be tied or tacked on to the hive-body. Vents between the paper and the hive-body are to be avoided.

Black building paper draws the sun's rays and is objectionable; a coat of light colored paint over the paper cures this defect and also prevents soaking from snow and rain. Almost any kind of strong paper may be used for the outer covering if given a coat or two of paint to make it sufficiently waterproof. Old newspapers folded and tacked or tied on to the hives, when covered with stronger paper, afford splendid protection.

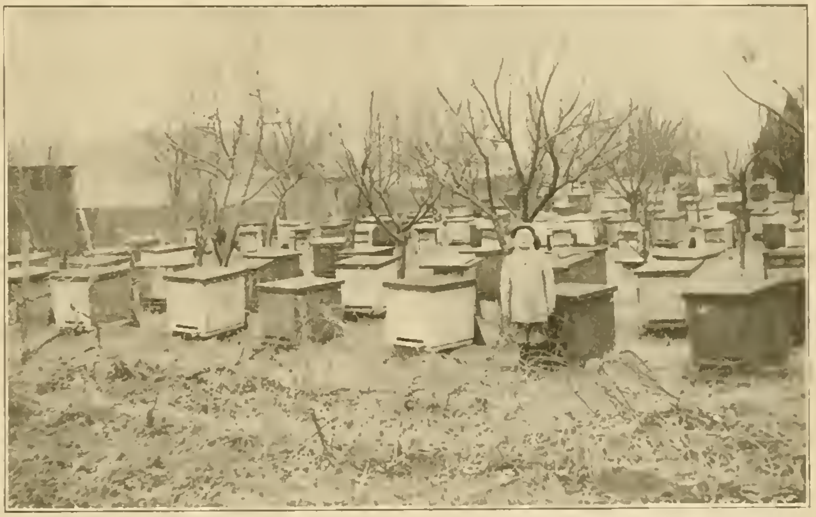
These methods of protection are also recommended when bees are wintered in sheds or other non-heated buildings above ground. In such cases less paper insulation is required; the painting process and cover boards may also be omitted.

By carefully observing the important factors herein referred to, bees may be safely wintered outdoors because they will at all times be able to maintain sufficient temperatures for their comfort and health without excessive consumption of food or harmful physical activity no matter how low the mercury drops, and for the same reason the amount of food required is no greater than if wintered in a cellar.

The writer has successfully wintered bees year after year in single-walled hives stored in single board sheds in Wisconsin, where the thermometer registered 20 degrees Fahr. below zero for days at a time, and these colonies were stronger and better producers than those wintered in the cellar.

When experience proves beyond doubt that cellar wintering may be safely dispensed with, it will remove one of the bug-a-boos of northern beekeepers, and should result in a greater stimulus to apiculture in the northern States.

Grand Rapids, Mich.



APIARY OF R. H. SCHMIDT, OF SHEBOYGAN, WIS., IN WINTER PACKING CASES

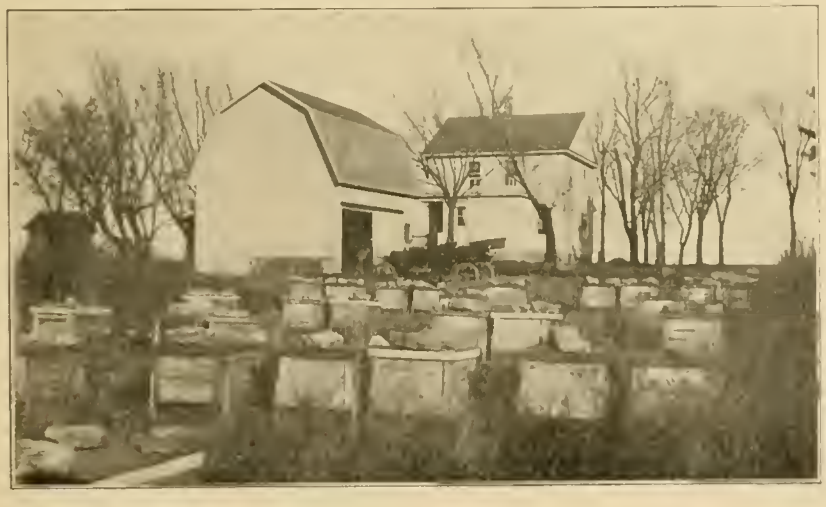


FIG. 3.—SWENSEN'S BEES IN THEIR WINTER CASES

Comb Honey Production Without the Use of Separators

BY ALLEN LATHAM.

ON page 187 Dr. Miller asks: "How does he do it?" and I have promised to tell how I do it. All beekeepers know how fast time goes with us, and that will explain why I have been so long answering that question.

It is perfectly simple and easy to produce good section honey without the use of separators, but to do so one must take certain precautions. First of all, he must have his hives level, perfectly level from side to side and preferably level from front to back. Personally I consider it a mistake on the part of many beekeepers to slant their hives to the front, especially when this slant involves supers also. It must be obvious to every one that, if the bottom-board slants, then no other part need slant. It is clear that with tilted hives the bees will not build marketable section honey, for the combs will be swung out of the sections since the bees build them vertically.

One cannot produce uniform sections without separators unless he keeps his colonies strong. Work must be started throughout the super at once, or at least not be so slow in spreading that sections can get well under way before adjacent ones are started. If this precaution is not followed, then each older section will bulge into the adjacent younger. This does not necessarily mean unmarketable honey, but it will mean a less uniform product, and one which has to be handled with more care. If, however, the sections are uniformly begun, the combs will meet midway.

The next requisite is the secure fastening of the full sheet of foundation to the sides of the section. If this is not done the foundation will warp, for almost invariably the bees get one side started before the other, and this causes the sides or rather edges to curl. This curling will frequently mean that the edges of the comb run into the adjacent section though the center is all right. If one does not care to fasten foundation thus, he must use only starters and not full sheets. Starters will produce excellent results in the production of section honey without separators. I need not here, though, dwell upon the disadvantages in the use of starters only.

It is not difficult, after one gets used to the process, to put in full sheets fastened to top and sides. It is but little slower than the hot plate method of fastening the top only.

Dr. Miller surmises that the 4 bee-way section may have something to do with the result. It does. I have produced thousands of sections of non-separatored honey with two-bee-way sections, but they offer one serious defect. When supers are crowded, the comb of one section will often overlap slightly the crack between the two sections. It will thus get sealed partly against the other section, and when the two are taken apart there is more or less daub. It is no worse than what many times happens with the use of fence separators. We all know how the fences are frequently attached to the combs and result in dauby sections. I love honey, but my love quickly turns to hate when that honey gets on my fingers or clothes. With a beeway at the side the bees will rarely carry the comb beyond and fasten it to the next section.

I have just been cleaning up over 2000 sections, and in all that number found but two cases where that had actually happened. In some way a sheet of foundation was dislodged and fell out of the super. The bees simply extended the two adjacent combs into that empty section, and did fasten them slightly to the middle section, so slightly that they scarcely leaked when pulled apart. Bees, especially Italians, like to keep passage-ways open. Hence, the side beeway is a great deterrent to bulging sections.

This article is intended to answer the question, and should properly be restricted to an answer. I find, however, that I have to supplement my answer with explanation and possibly defence of the method. At first I disliked the idea of handling sections with four openings. But it is like everything else, when one gets used to a thing he finds that much of his apprehension was ill founded. I have not taken exact data, but I am beginning to think that I can clean up a super of four-bee-way sections more quickly than I can the other sort. This is especially true if there is little glue. The sections have so little contact that they get better compressed than do the other sections, and hence there is less filling up of cracks by the bees. But if there is lots of glue it is harder to get a good result than with the plain section.

There are two tremendous arguments in favor of the production of honey by this method. One can get more honey with the same labor and the same bees. The product is more kindly accepted by the public. Since it is possible to produce a good article by this method, and since the desirability of such method is great, I ask for an honest consideration of the method and a fair trial before it is condemned.

Norwichtown, Conn.

No. 11.—The Honey-Producing Plants

BY FRANK C. PELLETT.

(Photographs by the author.)

THE Indian-currant, also known as coral-berry or buckbrush, *Symphoricarpos orbiculatus*, is a widely distributed shrub that furnishes considerable nectar in late summer. It may be found in woodland borders and open forests from New York, west to the Dakotas, south to Missouri and Arkansas, and from New Jersey south along the mountains to Georgia and Alabama.

The blossoms are very small and inconspicuous, Fig. 58, but where the plant is abundant it is much sought by the bees. In southeastern Iowa, the season of 1914 was a very poor one for the bees, and many colonies required feeding to get them through the winter. In a few localities where buckbrush abounds they not only were well prepared for winter, but stored some surplus. The blooming season is July and August in most northern States, so that the clover harvest is usually nearly over when it comes on. Figure 59 shows the bunches of red berries that hang on the bushes after the leaves have withered and dropped, and which will be instantly recognized by any one familiar with the plant. These berries are often about the only winter food available for small birds when the ground is covered with snow.

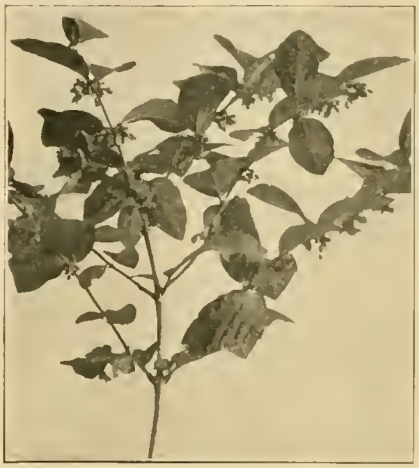


FIG. 58.—INDIAN CURRANT IN BLOOM

SPANISH-NEEDLES.

The Spanish-needles, also known as bootjacks, beggar-ticks, stick-tights, and marigolds, *Bidens*, are very widely distributed plants, and are of interest to the beekeepers from Nova Scotia to

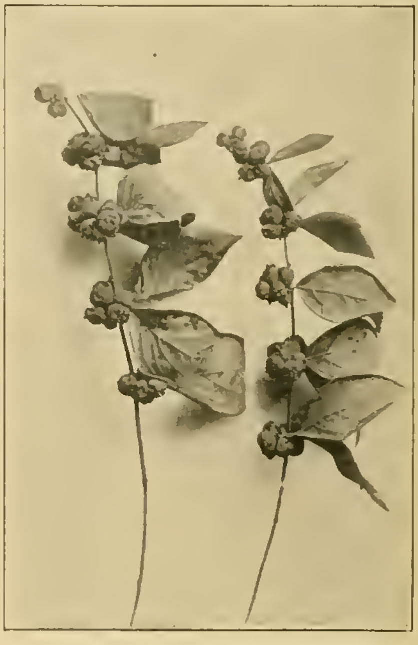


FIG. 59.—BERRIES OF INDIAN CURRANT OR CORAL BERRY.

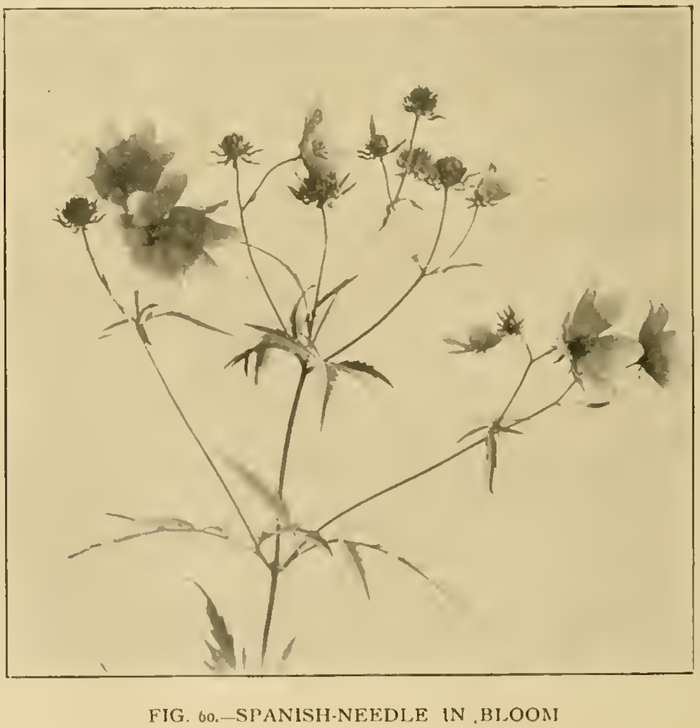


FIG. 60.—SPANISH-NEEDLE IN BLOOM

California. Most of the species are weeds growing most commonly on low or swampy lands. Not all of them produce honey in appreciable quantity, and possibly some of them are not sought by the bees at all. Figure 60 shows *Bidens aristosa*, which has an attractive yellow flower and is most frequently mentioned as a source of honey. This is particularly valuable on the lowlands along the Mississippi and Missouri rivers. During the past season (1915) much honey has been gathered from it.

Two species are reported among the honey-plants of California by Richter, *B. frondosa* and *B. pilosa*. The former is one of the most widely distributed species and closely resembles the one shown in Fig. 61, but has a wider leaf. *Frondosa* is seldom reported as yielding nectar, and it is of doubtful value to the beekeeper.

Figure 61 shows the western bur marigold *B. involucrata*, which occurs from Illinois and Iowa south to Texas and Louisiana. This is reported as a good honey-plant. This flower has no colored corolla, but is surrounded by greenish rays. August is the month of flowering with this species. The Spanish-needles are all late bloomers, and where they yield nectar add something to the fall honey flow.

Atlantic, Iowa.

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Shipping Bees in Pound Lots

BY CHARLES E. HOPPER.

THE plan of shipping bees in combless packages in early spring is making great headway in Ontario and in Canada generally, in fact. For a number of years we have been buying bees in this way, not only for our own use but for other beekeepers as well. This system is so much in advance of the old method of shipping bees on the combs, that we have decided to tell the readers of the American Bee Journal just how we operate, and why it is superior to the old methods.

In the North, a colony of bees is not in condition to spare either bees or brood much before May 25, hence, generally speaking, it is impossible to make any increase that will give a good return in white honey. A pound of bees placed on two drawn combs will, here in Ontario, equal, and in some cases, surpass a 3-frame nucleus, if it is started a little before fruit bloom.

During the season just past we shipped out nearly 400 pound packages of bees and about 75 3-pound nuclei. A considerable number of our customers bought both packages and nuclei because, as they frankly said, they were doubtful about the packages making good. To each of this class we addressed a letter asking to report to us at the end of the season their observations on the relative merits of the two systems.

Out of 17 letters received, up-to-date, 16 of them have reported "decidedly in favor of the pound package." Why? The 3-frame nuclei received from the South early in the spring, May 1. got a severe set-back, and in many cases stopped operations entirely until all the brood had emerged, then commenced slowly again, or, on the other hand, forged ahead so rapidly (we think weather conditions and apiary situations explain these contrary reports), that they either swarmed or prepared to swarm and sulked, which is just as bad, so that the total white honey crop was considerably less than it would have been had they just at the exact time reached their maximum producing capacity.

The pound packages came along slowly at first, but under the stimulus of fruit bloom and natural efforts reached their best at the time of the main flow, and held together with no thought of swarming, and in the end piled up a bigger surplus than the colonies built up from the 3-frame nuclei.

These reports are from all over Canada excepting British Columbia. Two reports came from Nova Scotia, two from New Brunswick, five from Quebec, one each from Manitoba and Saskatchewan, and the remainder from widely different points in Ontario. In addition to these written reports, we have received very flattering personal testimonials as to the value of the pound package system.

PACKING AND SHIPPING.

Our experience, covering five seasons, goes to show that there are some breeders and shippers who advertise very extensively, but are not able to deliver the bees in a satisfactory condition. The shipper must be not only a reliable, competent, trustworthy breeder, but what is of more importance in the pound package trade, one who knows how to put up the bees properly without losing a quarter of those in each package in transit, and has a thorough knowledge of the express business from the standpoint of tariff rates and proper routing of shipments.

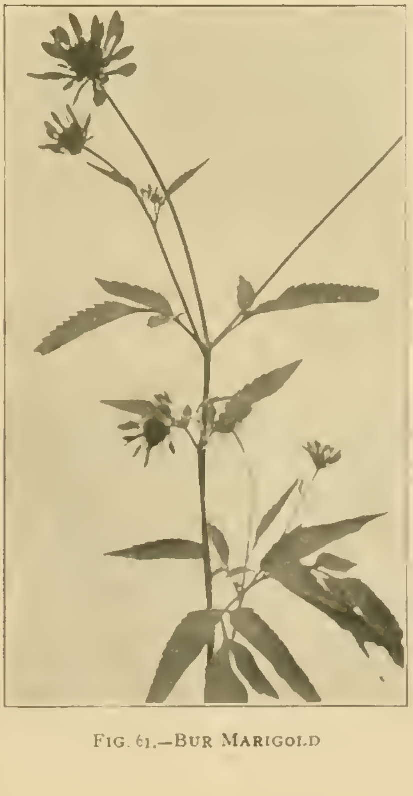
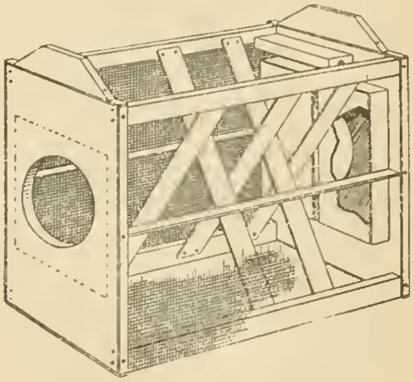


FIG. 61.—BUR MARIGOLD

KIND OF PACKAGES.

The package itself is important. It must be made so that on arrival at the apiary the bees can be easily removed therefrom. We find that if the queen is caged inside of the package (not on the outside) there is less loss of queens on arrival. Some breeders ship with the queen at liberty among her subjects. While not prepared to condemn it outright, we prefer the other way for various reasons.



THE MODERN WAY OF SHIPPING BEES

We find that the packages are usually made too heavy. This is a big item in a long shipment. There is a patented package now out that is just about right for size, weight and strength.

WATER NOT NECESSARY.

We do not think water necessary in shipping bees in combless packages. For some time we were in doubt about this point, but after receiving pound after pound during the hot season, we have come to the conclusion that water does not add any advantage to the package. In this we have had ample proof, as on the same train from the South we have received bees in both types of package and could detect no difference.

AN EARLY START NECESSARY.

If one would get the best results from the pound package, the bees should be received and put on the combs several weeks before fruit bloom. This gets them established nicely, and when the bloom opens up they forge right ahead.

We have received some very flattering reports during the past season. One lady reports 150 pounds of white honey, and she did not receive her bees until the middle of fruit bloom. As an investment, we believe it a paying one. There is scarcely any swarming during the season, and the whole force holds together much better than an old established stock. The bees seem to feel that they are still "juniors," and consequently work much harder than a colony that has come through the winter here in the North

THE ADVANTAGES OF THE SYSTEM.

Almost all beekeepers want to know just what advantage lies in any new system offered. The advantages are many. 1st. An early start can be made if increase is desired. 2d. Help can be given very early to weak colonies. 3d. The cost of getting a plant under way is small compared with purchasing full colonies. 4th. The express rates are very moderate. (It costs 22 cents per pound to send bees to Toronto from Alabama, if sent in 50 pound lots). 5th, but most important of all, it is simply impossible to transmit disease by this method if properly made candy is used.

We believe in the pound package. Indeed, we hope we will soon see the end of shipping bees on combs. If the pound package is purchased early enough, it is a much safer investment than a full colony of bees with all the risks of disease.

In closing this article we quote from a private letter received from an apiary inspector, a man full of years of experience: "This plan of shipping bees in combless packages deserves every support. I feel satisfied that in time it will go a long way towards eliminating the spread of diseases, which, in spite of our best efforts, is slowly on the increase."

Toronto, Ont.

Importing Bees into England—A War-Time Experiment

BY A. H. BOWEN.

I AM sending a photograph of 15 colonies of pure Dutch bees on their arrival at an English country station after a six days' journey from Amsterdam to London dock.

Importing bees in war-time is rather a risky and expensive operation. The freight and railway charges are heavy, and each consignment must be accompanied by a certificate of origin signed by the British Consul to show that the shipment is perfectly genuine, from a neutral country.

However, I was anxious for an extension of apiaries; and, further, of an opportunity of thoroughly testing the supposed disease-resistant qualities of pure Dutch bees. Apart from the last consignment of 21 colonies, of which 11 were utterly smashed, and the bees all drowned in their own honey—the bees came through in good order. Each box held six frames, and the covers were screened with wire cloth to allow of ample ventilation. Very few bees were dead, and in most cases the queens had continued laying, while *en route*.

The Isle of Wight disease has ravaged many apiaries, and the only likely means of mitigating its severity or of stamping it out seemed to be in employing a more resistant race than the common native variety, if such were to be had. In size Dutch bees are slightly larger than pure Italians. They are almost jet black. The queens are of good size, well developed, and carry three rings of slightly grey hair on the abdomen.

Dutch queens are extremely prolific, and breed late into the autumn. As a rule, the colonies are very populous, and yield good crops of honey in warm seasons; but in a cool wet summer the large populations consume much food, and are often in danger of starving if not fed. In Dutch bees the swarming impulse seems very highly developed. Colonies of medium strength will frequently construct 10 to 15 fine large cells in the preparation of swarming or when superseding their failing queen. They may continue to send out smaller swarms as the cells hatch after the first swarm has left. The bees do not use propolis excessively.

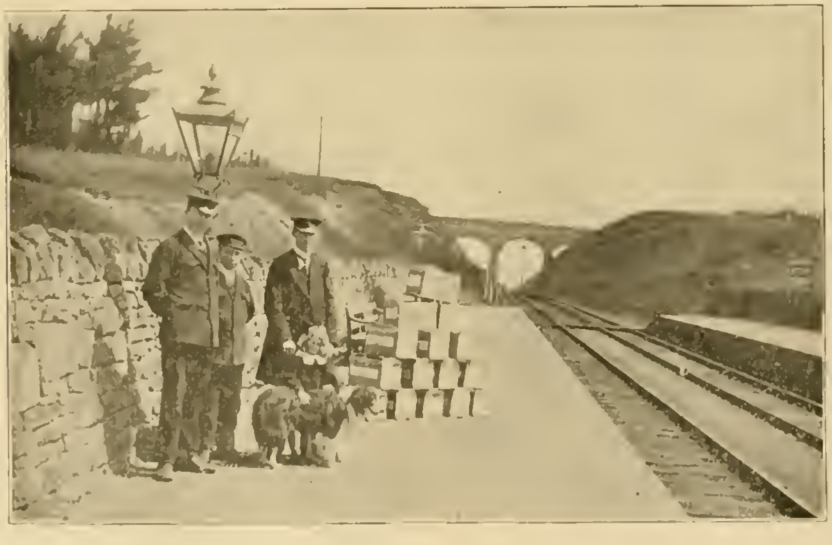
Temper appears to fluctuate in various colonies. Generally it is quite mild, but one sometimes comes across colonies with a habit of stinging vigorously when approached. From my own observations, and as a result of reports that have come in I should say that Dutch bees, both pure and crossed, are of great value in building up apiaries which have been reduced by disease; and I believe under careful management they will remain healthy in localities where disease is known to be rampant.

I have discovered that Dutch colonies with their natural fondness of constructing queen-cells are the very finest to use for starting and incubating artificial cups in a queen-rearing apiary. Whether queenless colonies or bees superseding their failing queen or upper stories are employed for raising cells, the results are equally good. Nearly all of each batch of cups given at one time are accepted, and lavishly supplied with royal jelly.

Some of the finest golden queens I have seen were reared by Dutch bees. In queen-breeding the best results are always obtained by having the queens bred in unrelated colonies of a different race, and Dutch bees are unexcelled for producing well developed, plump and long-lived queens.

When the war is over the restrictions which now hamper the importation of bees will pass, and I am not without hope that by greater selection and care in breeding from resistant stock we shall at last be able to wear out the Isle of Wight disease, and make bee-culture one of the most profitable of our rural industries.

Cheltenham, England.



A SHIPMENT OF DUTCH BEES AT AN ENGLISH RAILWAY STATION

Experience in Feeding Sugar Syrup

BY J. E. CRANE.

AS I have taken somewhat extreme views as to feeding sugar syrup to bees for winter stores, perhaps a more complete statement of my experience along this line may be of value to other beekeepers.

Having kept bees most of my life where little honey was gathered after clover and basswood, I have had considerable to do in feeding bees for winter.

When first I began to keep bees I thought that if I kept many it would be necessary to lay by a store of honey to feed in autumn or in poor years. Then I was told that if I would add cream-of-tartar to sugar syrup it might be fed safely, as the acid would prevent crystallization of the sugar. The laying by a large lot of honey to feed when needed seemed quite a burden, and if the use of the acid would prevent crystallization of the syrup it would be preferable, as I could buy the sugar when needed. I tried cream-of-tartar in the syrup, and it seemed to work very satisfactorily, as I found little granulation when such syrup was fed, and I was relieved of much anxiety about my bees starving to death in wintering after poor years.

Presently some one in some of our bee-journals said that vinegar was just as good as cream-of-tartar to keep sugar syrup from crystallizing in the combs and vinegar made from honey was just the thing. It looked reasonable and I tried it, and sure enough it worked just as well as cream-of-tartar. I could make my vinegar from honey rinsings or odds and ends not fit for the table and thus save the expense of cream-of-tartar. How fortunate to have learned this fact.

Later G. M. Doolittle, who has done a good deal of original thinking, gave his method of feeding sugar syrup and how he overcame the tendency of sugar to crystallize. His receipt was to dissolve two parts of sugar in one of water and bring it to the boiling point and then add one pound of honey to each six pounds of sugar used. [Prof. C. E. Bartholomew, of the Iowa State Agricultural College, makes the statement that syrup made of 85 parts of sugar to 50 parts of water will keep in-

A. H. BOWEN'S APIARY NEAR CHELTENHAM, ENGLAND

definitely and will not crystallize.—Ed.] I tried it and it worked very well. There was but little granulation, and what there was appeared to be quite soft, so bees could readily dispose of it. As I had usually a good supply of extracted honey from unfinished sections, I was inclined to adopt this method to prevent granulation in preference to those I had before used, although I did not as a rule use quite as large a percentage of honey as Mr. Doolittle recommended. I have used this method for many years, and fed tons of honey with the sugar to keep it from granulation, even buying it by the barrel when I did not have enough on hand of my own for this purpose.

During the last few years the seasons have been very poor, and we have had a demand for all the extracted honey we could produce and very much more. It has seemed necessary to economize to the utmost. Was it really necessary to feed so much honey in sugar syrup to keep it from granulation? I had my doubts, and with some hesitation and a good deal of trepidation I actually fed some colonies a heavy syrup (two parts of sugar to one of water), half expecting to find many of the combs solid with sugar the next spring. But I found nothing to sustain my fear of feeding syrup clear, and in the fall of 1912 I did nearly all of my feeding without the use of honey or vinegar or cream-of-tartar. I failed to find any more granulated honey in the combs than in previous years. In fact, I found that nothing added to the syrup worked as well as the additions I had previously used. So well satisfied was I with results that I have used nothing to prevent crystallization for the past three seasons.

In the fall of 1914 we fed some five or six tons of sugar without the addition of a pound of anything to keep it from granulation. So much has been written of the value of cream-of-tartar or tartaric acid that I have watched the condition of stores in the combs in the spring of 1915 with unusual interest, and so far as I could see nearly all the granulated stores I found came from honey stored by the bees the previous summer. Two yards had secured enough honey to winter on, and in these we found the most granulation, while in those yards that had to be fed almost their entire supply for winter I found very little granulation, quite as little I think as when I tried to prevent it by the addition of honey or acids.

There are other fallacies that I may as well speak of at this time. One is the necessity of bringing sugar syrup to the boiling point to break up the crystallization of sugar. I have burned quantities of wood in doing it, but have found it wholly unnecessary. All that is needed is to melt, or rather dissolve it in the water, and as hot water will dissolve it quicker than cold, we use hot water but do not wait until it boils.

Again we have been told that we should feed early that the stores may be sealed up before winter. Certainly there are no objections to doing so, but I have so far failed to recognize any serious results following late feeding or unsealed sugar syrup in the combs. I presume we had two tons of unsealed syrup in hives in the fall of 1914, and where not consumed it looked in the spring as though it might have been placed in the combs the previous week. Sugar syrup does not appear to absorb moisture as readily as honey.

In looking over hives this spring I found some where the feeders leaked and the syrup ran down over the combs and on to the bottom-board. Such syrup I found as hard as so much ice, yes, harder, more like glass, and presenting a remarkable contrast to that in the hives that the bees had stored in the combs.

Now I would not say that tartaric acid is not desirable where syrup is fed 2½ parts of sugar to one of water. From my experience I would almost think it necessary to keep it from granulating before the bees would take it up unless fed to very strong colonies.

I have simply given my experience in feeding and the conclusions I have come to as a result of such experience. We are feeding again this fall, without the addition of anything to prevent the granulation of syrup made by two parts of sugar and one of water. It seems to me quite evident that bees know as well as we do how to prevent granulation, and I shall hereafter leave the matter with them.

Middlebury, Vt.

Weeds, Soils, and Honey

BY TARLTON RAYMENT.

Author of "A Treatise on the Bees and Nectariferous Plants of Australia."

WEEDS have been defined as "plants out of place," but there are some specimens that are obnoxious in any situation. Happily, the number absolutely useless is very limited. The apiarists of most countries are more or less indebted at some period of the year—to the botanical pariahs for honey or pollen, perhaps both.

A wide and interesting variation occurs among the weeds. The methods of their distribution are no less wonderful and unique. Insidiously some "commandeer" the services of a bird's plumage or even the maw; while others utilize the fur of animals or the cloven hoof of cattle to spread their seeds over the countryside. Thus the miniature yellow suckling clover succeeds as a notable traveler though, it must be admitted, a rather spasmodic one. There are navigator seeds that nature has specially provided with a set of water-wings that peculiarly fit them for aquatic wanderings; an everyday example of which is the common dock of low-lying swampy country. Thistles, on the other element, evolved a scheme of aeronautics long before he to whom is given dominion over the beasts of the fields and the birds of the air.

Modern agriculture has, unintentionally, been the means of distributing many weeds through the agency of impure seed. A few of the unbidden guests have subsequently proved themselves the friends of the graziers and the apiarists. Quite a few have developed from persistent weeds into esteemed fodder plants. The question arises whether the term "weed" is not then a misnomer.

The cape weed (*Cryptostemma calendulaceum*) is a striking example. Botanists class it with the Compositæ, and definitely state that "it possesses no food value," though this is disproved by the experience of practical dairy farmers. Introduced to Australia from Africa, this plant so readily acclimatized itself that every State in this vast commonwealth is now familiar with its yellow bloom in early spring. It is not infrequently referred to—though erroneously—as dandelion. Indeed, the similarity is in the general aspect of the fields during golden inflorescense. Closer examination of the flowers reveals only a single row of petals similar in many respects to a marguerite. The center is dark colored and characteristic of the composite order to which belong thistles, sunflowers, etc.

It is notable that while a weed may be actually deleterious to stock in some localities, transplanted to other soils in distant fields it becomes a pasture of no mean value. In South Gippsland, which forms the mountains and most southerly portion of Australia, the deep rich soil is volcanic in origin

—therefore acid—and of a bright ferrous-red color. White, red, alsike, crimson and strawberry clovers grow in abundant profusion as do also all English grasses. The cape-weed flourishes likewise, and the plants approximate in size America's best specimens of dandelion.

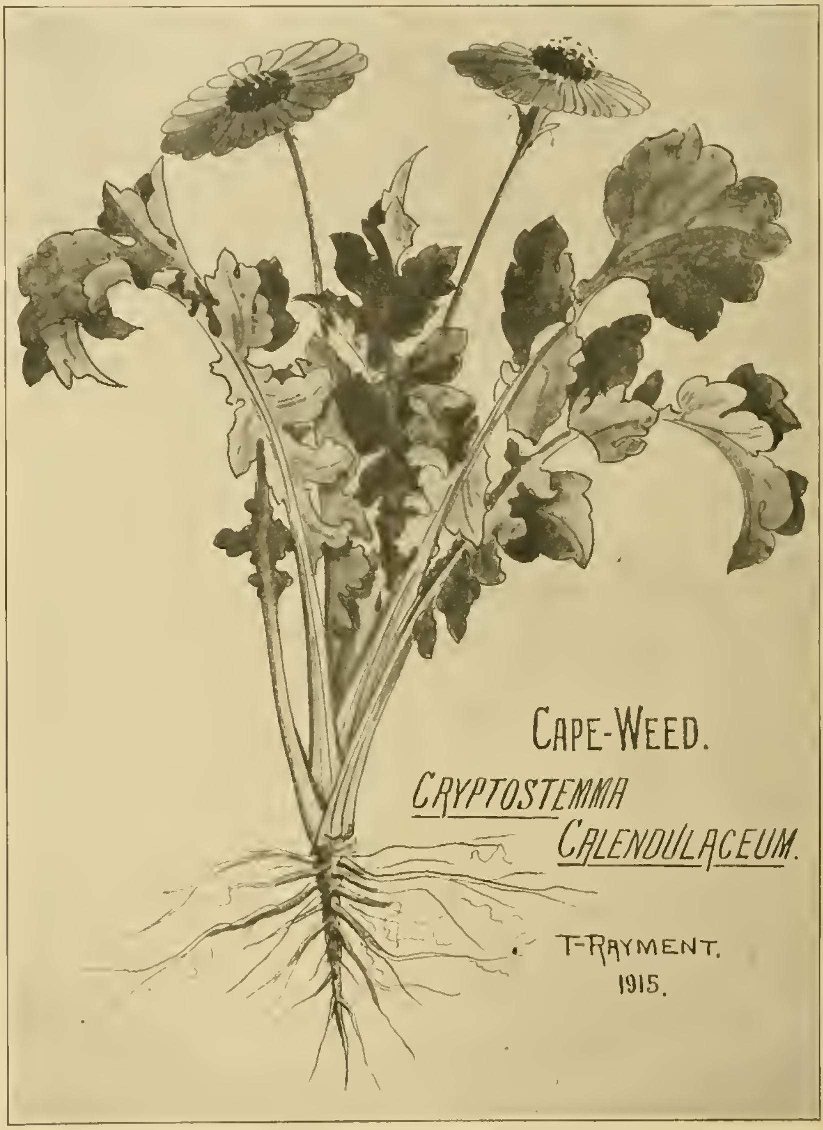
Northward, 50 miles distant, are the extensive plains of Gippsland. The shallow, gravelly, hungry soil has been composed—through the centuries—by the "breaking down," if we may use the term, of the original conglomerate rock forming the higher levels. The climate is distinctly drier and hotter. In spring, especially if it be a wet one, the rather dreary landscape is transformed into a succession of fairy fields gloriously "powdered" with the prolific blossom. It is ubiquitous for even the roadsides flame like golden ribbands. It is overwhelming for no other plants are discernible amid the floral glow. Cattle grow sleek and milk profitable on the feast of flowers, yet the most fastidious critic would fail to detect any abnormal taste in either milk or butter.

From morn till dewy eve the bees gather the harvest of pollen and nectar. Colonies breed up in quite a wonderful manner, and even store a surplus of honey. An average of 30 pounds per hive was recorded from this source. The density of the honey is not as great as that from the eucalyptus, but of course the product of the trees mentioned is exceptionally heavy. The flavor is best described as a distinctive nutty one not acceptable t while the ripe golden hue resembles the color of American goldenrod honey. Like that of most ground flora the honey quickly candies with a coarse grain. The crystals are murky drab in color and very large. Beeswax produced during the flow also partakes of the pervading yellowness. So swiftly has the cape weed traveled since its advent to Australia that it is now common to all States, and has been described as "the most valuable pollen plant in the commonwealth." While the writer regards this dictum as too sweeping, it serves to indicate the Austral beekeepers' esteem for the weed.

In New Zealand, which is a typical clover country, the pennyroyal (*Mentha pulegium*) has monopolized whole tracts of country in a most alarming manner, so much so that the plant has materially altered the flavor of the Dominion butter. After the controversy in America regarding the merits of sweet clover, it is not irrelevant to point out that Vincent Jackson, B. A.—an authority in New Zealand—states the yellow sweet clover there develops an objectionable woody fibre so that stock rarely eat it. On a small speck of land south of the Australian mainland, the "King Island melilot" (*Melilotus alba*) flourishes. It covers many thousands of acres, but as the writer is aware no apiarist has "tried out" the island. King Island is famed throughout the continent for its fat cattle raised on melilotus.

The difficulty of discovering the right name for each plant is quite a desideratum when speaking of foreign species. For instance, the American viper's bugloss or blue thistle" is an old Victorian identity masquerading under the title of "Patterson's curse" (*Echium violaceum*). It was named after a misguided settler who introduced it to Victoria. The "bugloss" or "curse" —whichever is preferred—is not of course a true thistle, though it is a good honey-plant.

In conclusion, the writer has tried many American plants, but the results, with few exceptions, were not encouraging. The honey locust is a beautiful success, but the tulip tree, goldenrod, buckwheat, and spider plant were downright failures for producing nectar. Borage is very good in the heavy rainfall districts. The clover country rarely produces much over 30 pounds per hive, and this where the hills are quite covered with red or white bloom. On the other hand, the river-flats clothed with strawberry clover—a distinct creeping variety—are very good for honey. Victoria, Australia.



THE CAPE WEED OF AUSTRALIA

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Miscellaneous

1. I hived a second swarm of bees on frames with full foundation, and they had been hived only seven days when late in the afternoon I noticed them fighting. They did not look like bees trying to rob, but field bees coming in from work. As soon as they would light, the bees coming out of the hive would pounce upon them. I reduced the entrance. The next morning they were still fighting, and there was a big pile of dead and crip-

pled bees in front of the hive. Still, it did not look like bees robbing. I was wondering what I could do when the bees swarmed out. I opened the hive they were in and they had not done a thing, the foundation was the same as it was when I hived them eight days before. They had lots of ventilation and shade. What was the cause of them acting this way?

2. In the spring I had one weak and one queenless colony, side by side I gave a Caucasian queen to the queenless one. On the last day of June, I noticed toward evening that the weak one did not fly much and clustered outside. I thought they were going to swarm. At this time there was just enough honey and pollen coming in to keep brood-rearing in good shape, but no surplus honey. The next day they did not fly as much as before and clustered out more, and the next day they flew less and clustered out still more, and the next day not a bee flew, and all clustered on the outside. All of my other hives were carrying in pollen and I could not understand it, so I opened the hive and lifted off the super, and found there was not a bee in it, and very few bees on the combs. They were almost starved to death. I gave them some frames of sealed honey, and by the next day they were carrying in pollen the same as the rest. I thought if the bees were that near starved I need not look for a swarm from my Caucasian swarm, but the next day it swarmed out, and went to parts unknown. I opend this hive and found there was not very much honey in it, but I never saw as much brood in a hive as that one had I cannot understand what would make the difference in two hives set within five feet of one another.

3. I made some bees queenless, and in seven days cut out all queen-cells. Fourteen days later the bees swarmed out and I hived them back in the same hive. I expected the queen to be small and poor, but she proved to be large and prolific. Does it often happen that way?

4. If you handle bees in a locality where the main honey flow is from heartsease blossoms, in what way would you put up that honey for the market, comb, extracted or bulk honey? In this locality heartsease honey, or smartweed as some call it, is dark and has rather a strong taste. OKLAHOMA.

ANSWERS.—1. I can only make a guess in the case. It may be that a swarm from another hive tried to enter, and was repulsed. With plenty of ventilation and shade I don't know why the bees should swarm out unless as a sort of hunger-swarm.

2. There may have been more honey in the Caucasian colony in the first place, enough so that there was no fear of starvation, although but little left when they swarmed.

3. No, I don't think it often happens that way. Still, there is nothing so very much out of the usual. The bees swarmed out 21 days after they had been made queenless. That was not at the time the queen emerged from her cell, but at the time she took her wedding-flight, which is usually 20 days or more from the laying of the egg. The only troublesome factor in the case is the supposition that the bees started a cell seven days after the removal of the queen, making the larva at least four days old, from which no queen could be reared. But it would be an easy thing for you to miss a cell that had been started two or three days earlier, since it would be a very small affair, especially if on the center of a comb. In that case the queen could be all right.

4. That depends on your market. In some places it would be all right in sections, and in others extracted.

Wintering—Ants

1. I have 50 colonies of bees all in 8-frame hives, 20 of them the old original colonies) have one-piece flat tops, and 30 of them (this spring's swarms) have flat metal tops with inside covers. Last winter the ones with the flat tops appeared to have moisture condense on the under side of the lid and drip down on the combs and cause them to mold. I had one thickness of muslin between the hive and cover. How can I prevent this? I winter out-of-doors.

2. In putting the metal tops together, I put eight or ten thicknesses of newspaper between the metal and board. Is this style of top likely to give trouble in the same way?

3. I have a few bee-escape boards which I use in removing the honey, but I haven't bee-escape holes cut in the inside covers. Is it best to cut these holes and then cover them with burlap in the winter?

4. How can I rid my apiary of red ants? They build their hills near, and sometimes directly under the hives and crawl into the hives and kill the bees.

5. In hiving a swarm do you put them in at the top or bottom of the hive?

OREGON.

ANSWERS.—1. Put a nail under the cover so as to make a slight escape for the moisture; also pile some sort of packing 6 inches thick on top of cover.

2. Not so much.

3. Yes.

4. Have 4 feet to the hive, each foot standing in a little vessel of oil or water. Find the nest of the ants, with crowbar make a hole in the nest and pour in carbon disulfide.

5. It doesn't matter so you get them into the hive, but generally you will find it easier to get them into the hive at the bottom, as bees of a swarm naturally incline to crawl upward.

Shallow or Full-Depth Super—Packing

1. I have been running for comb honey but intend to run for extracted, but do not know which kind of super to adopt, the shallow or the full depth. I have had a little experience with the shallow this summer, but thought I would like to try the full depth but for one reason, and that is on account of the inconvenience of handling when full of honey. If I use the full depth, will it be possible for me to take off the honey alone or does it require two persons, one to raise the super and the other one to slip the bee-escape under? As I have to work with the bees alone, I would like to have your knowledge and experience on the matter.

2 Do you think that if given a full depth it would lessen the chance of swarming more then if given a shallow super, and when half full give another?

3. Is two inches of packing material between hive and winter-case sufficient in this climate, the thermometer registering sometimes as low as 15 or 20 degrees below?

MINNESOTA.

ANSWERS.—1. You can manage with either alone, although of course it is easier with the shallow frames.

2. No, on the contrary those who use shallow extracting-frames say they are a help toward prevention of swarming.

3. Two or three inches will do at the sides, with four to six on top.

Probably Queenless

I have 7 colonies of bees, and they are all doing fine but one colony. They don't seem to work any, have only filled one super this season, and seem to be eating up the honey they have made. I do not know a queen, so I cannot tell if they have a queen. The hive is full of bees. What is the trouble, and what can I do for them? PENNSYLVANIA.

ANSWER.—You can easily tell whether a queen is present without being able to see her. Look and see whether eggs or young unsealed brood can be found. If not, you may feel pretty sure there is no queen in the hive.

[It would not be surprising if no eggs or brood were present in a normal colony as late as October.—EDITOR.]

Miscellaneous

1. At about what date do you contract from two hive bodies to one, and how do you do it, by shaking? I assume that most of the workers must be left in the single chamber, so that the gathering force there may be as strong as possible.

2. If you do shake, doesn't it make the system very similar to the Doolittle plan?

3. I see by Mr. Root's account of his visit to you, in last Gleanings in Bee Culture, that you still had supers on Sept. 6. Do you leave them on until the fall flow is exhausted?

4. If so, don't you find that the stores in the brood-chamber are very scant as cold weather comes on, and that considerable feeding is necessary? That was my experience this year, and it occurred to me that I might have done better to take off all the supers by Sept 1 and force the late flow into the brood-chamber for winter stores.

5. I imagine our climatic conditions are very much alike. At what date did you remove the last of the supers this year?

6. Do you endorse the suggestion of Alexander as to running part of one's colonies for extracted honey and feeding back into the comb-honey hives to provide continuous supplies there for night work, and at times when weather prevents field work?

7. I fed back this fall some partly filled combs which I had had on weak colonies to get foundation drawn out. I made a box that would just hold two frames and fit over the wooden block of a Boardman feeder, the box being arranged so that bees couldn't enter it except from inside the hive that was being fed. Do you know of any objection to that plan, either in the summer or late fall? Is it just as good to feed the honey back that way as to extract and dilute somewhat? ILLINOIS.

ANSWERS.—1. You will find in "Fifty Years Among the Bees," that about as soon as clover-bloom begins, or at least within ten days after seeing the very first blossom, I give section-supers, and at that time I reduce to one story, leaving in that one story all the brood I can and all the bees, shaking or brushing all the bees from the combs I remove.

2. Mr. Doolittle gives an upper story with a considerable stock of honey; I give a lower story with generally no honey.

3. Sometimes, and sometimes I take off sections and give combs to be filled for use the following spring to feed the bees.

4. No, by the time the fall flow is over, if not some time before, the hives are heavy for winter. Years ago, however, it was not so. Either the pasturage has changed or else the bees.

5. The last super was taken off Sept. 30. It might perhaps have been as well a little earlier.

6. I never made a success of feeding back to have the honey filled in sections.

7. I have not had experience enough to say.

Bee Paralysis

In July my neighbor robbed his bees of what honey they had in the super, and a few days later the bees began to die. They would come out of the hive and start to fly away as though going to work, but would fall to the ground as if they were loaded with honey. Some would get a foot or 18 inches from the hive, others would tumble off the edge of the alighting-board and they would all crawl around on the ground and die. None of them ever flew again after their first attempt. INDIANA.

ANSWER.—It sounds like a case of bee paralysis, in which you will probably find a trembling of the wings and the bodies of the bees swollen. In the South it is sometimes formidable, but as far North as you are it generally disappears without doing a great deal of damage. Many cures have been offered, only to fail the next time they are tried. Perhaps the most hopeful remedy is to sprinkle sulphur on the combs and at the entrance.

The Strain of Italians—Basswood Trees

1. I am a beginner, and have about 30 colonies of bees, the first of which was a stray swarm. The bees are grey striped with four yellow bands, the width of which vary. I wish to keep pure Italians. What kind of bees would you say I now have? I understand most people prefer leather-colored Italians. Are they the same as 3-banded Italians? Are goldens the same as 5-banded Italians?

2. If I purchase three Italian queens next

spring and use drone-traps as much as possible on my remaining colonies, what percent of the Italian queens which are reared will be purely mated?

3. How can I be absolutely sure that they are not crossed with my bees? The only bees near me are four or five colonies which are three-fourths of a mile distant.

4. Would Italian bees store enough more honey per colony so that it would pay to requeen each colony?

5. My location is such that I can now keep about 300 colonies; however, I wish to plant about 1000 basswood trees along three miles of road fence. Would they be too close together?

6. How many colonies would they supply work for, counting 75 pounds of surplus per colony?

7. If there are different kinds of basswood trees, which is the best honey producer?

8. Where can I obtain the seed?

9. At what time would it be best to plant it?

10. How many years would it be before the trees would produce any amount of honey?

11. How much comb honey can one expect from a colony during a good season, provided no increase is made? ILLINOIS.

ANSWERS.—1. Your bees are most likely Italian. Leather-colored Italians are 3-banded, but not all 3-banders are leather-colored. If I am correct, 5-banders and goldens are the same.

2. I don't know. Maybe 60 percent, maybe 90.

3. There is no easy way by which you can be absolutely sure. You might come near it by keeping in cellar the nuclei with virgins and drones, then taking them out and by feeding stir them up to flight in the afternoon after the other drones have ceased flight.

4. Possibly; possibly not. Depends on how good they are.

5. They would do all right, being nearly a rod apart, but it would be better to have them farther apart.

6. I don't know, and I don't know of any way to find out.

7. There are the American and the European. I think the American is the better, but I'm not sure.

8. It is possible you can get the seed of seed dealers, but it ought not to be difficult to get some one who lives where basswoods grow to save seed for you, a single tree yielding a large quantity of seed.

9. Probably in the fall.

10. I think something like 15 years from the seed.

11. The amount varies greatly; from nothing to 300 pounds or more. Dr. E. F. Phillips estimates the average at 25 to 30 sections per colony. That, of course, takes good seasons with bad. If you take good seasons alone, it might be twice as much.

Old Combs

1. Will combs that have had brood reared in them from one to three years spoil the color and flavor of honey if used for extracting frames?

2. Which makes the best extracting frames the shallow frames or the regular brood frames? OHIO.

ANSWERS.—1. There may be a slight difference, but you probably could not tell the honey from that stored in newly built combs.

2. Shallow frames are in some respects better; but it is a little less troublesome to use frames of the same size as in the brood-chamber.

No feeder

How will this new plan of feeding bee work? Place tin containers about the size of a half pound baking powder can *cover*, containing bee candy, above the brood frames, inside a 1-inch wooden frame to fit on the top of the hive under the cover. These tin containers set side by side just bove the brood frames, would be in the warmest part of the hive, and their candy contents would be easily accessible to the bees through the holes between these circular tin containers. This plan of feeding is easily adjustable, as a sufficient number of feed containers can be used for either large or small swarms with no danger of feed running out to kill the bees. Tin can manufacturers can supply these at small cost. CALIFORNIA.

ANSWER.—This plan would work all right, I should think. In weather a bit cold the bees would not reach the candy quite so readily as if laid directly on the top-bars.

Size of Hives

1. I purchased a colony of bees in a home-made hive with outside measurements, Twelve inches high, 18 inches long, 13 inches wide and ½ inch thick. Is this a standard size?

2. How far apart should frames be placed in a hive to prevent cross-building and bracing of comb?

3. I would like to know if there is a book on making hives? OHIO.

ANSWERS.—1. No, it is not a standard size.

2. The spacing in general use is 1⅜ inches from center to center, but some excellent beekeepers prefer 1½ This for the brood-chamber; but some space wider in extracting-supers, up to not far from 2 inches. But the spacing does not prevent cross-building. That is done by filling the frames with comb foundation, or at least having starters of comb or foundation.

3. I know of no such book.

Good Locations for Beekeeping—Best Hive for Comb Honey

1. I would like to find out what part of Illinois and Wisconsin is best for beekeeping?

2. What kind of land is best adapted for beekeeping?

3. Name the kind of pasturage I must have to get good honey?

4. On 10 acres of land how many colonies could I have?

5. What is the best kind of hive for comb honey? ILLINOIS.

ANSWERS.—1. Good locations are scattered all over both States. Your problem will be to find one not already occupied, or one where you can buy out another beekeeper.

2. Perhaps where there is lime enough for clover to do well.

3. White clover, basswood, and fruit blossoms are a few of the principal honey-plants in the States named.

4. A very large number of colonies can be put upon 10 acres if surrounding pasturage is enough to support them, although generally there will not be pasturage for more than 100. But if you mean the bees are to forage on no more than the 10 acres, it would have to be extra good pasturage to support 10 colonies

5. The majority of beekeepers seem to think nothing is better than the 10-frame Langstroth, or dovetailed.

Queen in Nucleus

1. I have a fine breeding queen that I put into a nucleus in the early spring. The result was that my queen became so feeble that she did not lay at all, and the bees tried to supersede her. To save her, I put her into a strong colony and she went to laying, and has as fine a colony of bees as I have ever seen. What was the cause of her not laying in the nucleus?

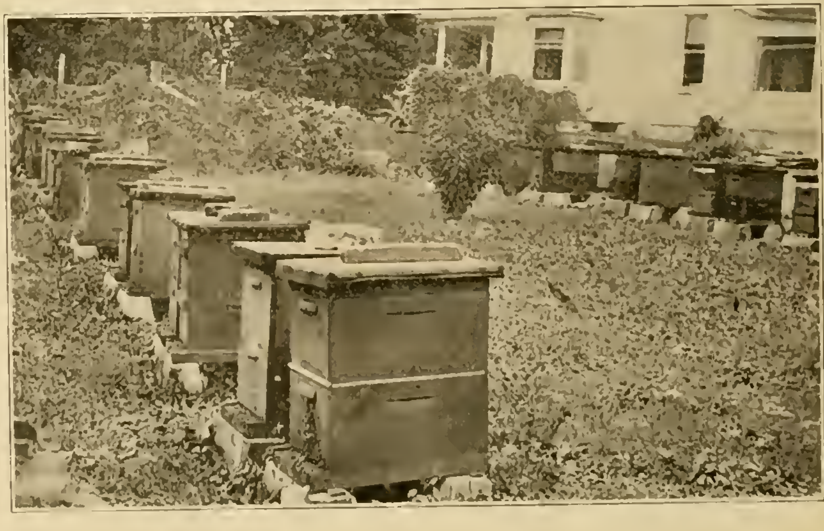
2. Will this queen be good next year?

3. Have you ever experimented with a queen to see if she would stop laying if put with just a few bees? TEXAS.

ANSWERS.—1. I can only guess. My guess would be that you introduced the queen into a nucleus the bees of which were somewhat hostile to her, but still allowed her to lay enough so that they could start queen-cells; or that she didn't lay at all, and the queen-cells were started on brood they previously had. Then she was introduced into a full colony that was in a humor to receive her kindly, when she did good work. Possibly you may object to this that she was not introduced into the nucleus, but that the nucleus was formed of her own bees In that case it might be that something may have happened in forming the nucleus, or in handling it afterward, that made the bees hostile to the queen, for you probably know that it sometimes happens that the queen is balled merely because the hive has been opened. You seem to lean toward the belief that she did not lay because the nucleus was weak. Might be, but for the fact that the bees tried to supersede her, that superseding showing that the bees were not fully satisfied with her.

2. In considering what she might do next year, I think her last performance should be considered rather than the previous performance in the nucleus, for her after-performance showed her to be a good queen, and the previous trouble was with the nucleus rather than the queen; so she *may* be all right for next year.

3. Never experimented directly in that way. But I have had quite a number of cases in which a queen was introduced into a colony and remained a week or more with-



APIARY OF E. H. UPSON IN NORTHERN INDIANA out laying, and then went to laying all right, although in some cases laying only a few eggs and being superseded.

Melheglin

Please give me directions for making metheglin or honey mead ARKANSAS.

ANSWER.—From 1½ to 2 pounds of honey to a gallon of water, with some grape juice or apple juice in small quantity to start fermentation, with the temperature at 70 degrees or more It must be kept well covered and yet the gases must be allowed to escape. If air is allowed freely to it, it will soon turn to vinegar and make excellent vinegar.—EDITOR.

Wintering Out-of-Doors

I am preparing to winter the bees out-of-doors. The question arises, will the bees be smothered in case the snow drifts over the hive entrances? One neighbor beekeeper tells me he thinks not. Another says that the entrances should be kept free from snow or the bees will be smothered.

WISCONSIN.

ANSWER.—Bees have wintered well in some cases when buried in snow, and very poorly in other cases. Sometimes when buried deep a space melts about the hive, leaving the bees with good air and in good condition, yet sometimes brood-rearing starts and the bees come out in bad shape. Where buried lightly, snow may fill the entrance in a sort of slush and freeze solid, resulting disastrously if the entrance be not opened. So you see your informants may all be right.

REPORTS AND EXPERIENCES

October Swarm

I have several times read of September swarms. I found a swarm hanging in a tree Oct. 18. I put it in a hive with frames of comb, one frame full of honey and a super partially filled. The bees are doing fine, although I have failed so far to find any eggs. They have a queen, but I don't know whether she is fertile. J. H. WARREN.

Elliott, Iowa, Oct. 24.

Ton of Comb-Honey from 56 Colonies

The season has been the worst in a long time in this locality, but I think my bees have done fairly well considering the season. I have about a ton of comb-honey from 56 colonies, spring count. I also had a little foulbrood (European), but I think I have cleaned it up, partly by the dequeening method and requeening with Italian queens. The worst cases I shook and then requeened them.

I have mostly Italians and hybrids, and have also introduced a few Caucasians and Carniolans to try them. JOSEPH COOK.

Watertown, N. Y., Oct. 9.

Aster Honey

The fall of 1913 was rainy and chilly about the close of the aster bloom, so that the late gathered honey from all sources was not well ripened. I had to provide a tank with heat under it to ripen the honey which I had to sell.

In the spring two of a dozen colonies were dead I was not able to determine positively what was the real cause, but there was that coincidence—unripened aster stores and two lost.

The fall of 1914 was very dry for weeks, and warm. I found brood in every hive as late as Oct. 20. Bees were flying freely after all bloom was long gone, and I have never had colonies come through so uniformly strong and prosperous.

My belief agrees with your "impression that the main reason why 'aster honey is bad food for winter,' is that it is harvested so late that much of it remains unsealed ......" and unripened.

I regard that feature of the fall flow as a handicap, and as making a fall flow less desirable.

This fall was so wet, dark and cold during aster bloom that the bees got practically none of it, as it was gone when the weather cleared. The result is rather scanty stores.

New Jersey. DOCTOR SMOKER.

Two 8-Frame Stories for Wintering

The enclosed photograph is a view of my apiary, and was taken just after the supers were removed and the extra hive-body was added for winter. For the past few winters I have practiced giving some extra combs which I place in an extra hive-body and place this body on the bottom-board with the brood-nest on top. My method has been so satisfactory and so easy of manipulation that possibly some other amateur beekeepers may be benefitted by my experience.

After removing the comb supers and about the time the queens cease laying, I give two or four frames of honey (I use Hoffman frames) to each colony. E. H. UPSON.

Ubee, Ind.

APIARY OF MR. J. COOKE, WATERTOWN, N. Y.

My Bees Wintered Well the Past Two Winters

My bees wintered well in 1913 and 1914, so they were in fine condition for the harvest when it came. I harvested 6000 pounds of extracted honey from 120 colonies, which was good enough for a poor season. I always leave plenty of honey in the hives to make the bees feel rich in spring.

Plenty of bees, plenty of honey and a young queen, with a warm hive and a sheltered location make the bees get there for the honey harvest. OTTO BANKER.

Sleepy Eye, Minn.

Heat Treatment for Stings

For treating stings I have found my smoker quite handy. Rub the sting off and apply the smoker as close as possible without burning. A match will have the same effect. Remove the sting and hold the burning match as close as possible. This heat treatment I have found to be the best cure for stings. H. E. MYERS.

North Yakima, Wash.

Fertilized Queens Going Back to the Right Hive

With my 4-colony cases, I have been unable to have queens fertilized and go back to the right hive until I tried pasting different colored paper on the doorsill, so Miss Virgin could remember the color of the carpet to cross before reaching home.

The first amendment is, lay a stick at right angle near the entrance, as a guide. It worked well in my locality. Possibly this may be the *finis* on modes of queen introduction. F. F. GEORGE.

Fraser, Idaho.

High Pressure Beekeeping

The DeSoto Argus tells that Wm. Bates, of that village, has made quite a reputation for himself as a bee culturist this season. He started out last spring with but 7 colonies of the busy little honey makers, and today has an increase of 50 colonies.

Mr. C. C. Bishop was in from Retreat on Friday making a delivery of honey to George Sweger. He kept strict account of the work of 10 colonies for 10 days, and the product of extracted honey amounted to just $100, or one dollar a day for each colony.—*Viroqua* (Wis.) *Censor*.

Fair Season, But a Dry and Hot Summer

We had a fair season notwithstanding our exceedingly dry and hot summer. Bees are still storing honey from aster. Goldenrod is about over. Four-frame nuclei, of which we will winter 400 stocked with young queens, mostly of September rearing, will begin the winter with four frames nearly solid with stores of their own gathering.

J. W. K. SHAW & CO.

Loreauville La., Nov. 5.

Fine Fall Honey

We produced 3000 sections and 10,000 pounds of extracted honey this season, and bees are in fine shape for winter. Our fall honey, mostly from heartsease, is as white as clover. I can't understand it. It is very mild in flavor. The finest fall honey I ever produced. W. S. PANGBURN.

Center Junction, Iowa, Nov. 10.

Lesser Beemoth or Brood-Worm

In answer to a question asked by "Rhode Island" about the lesser beemoth (I call it the brood-moth), I guess it is the greatest pest the southern queen-breeder has to contend with.

This worm will get so well established that sometimes it will cause good average colonies to swarm out. The fly is very small, and is usually found in the bottom of the nuclei. They are worse in south Texas than anywhere I have ever kept bees.

Buffalo, Tex., Nov. 4. C. B BANKSTON.

The Honey Market—A Lion and a Match

Our friend, M. H. Mendleson, of California, has given on page 333, the exact condition of the honey market in Arizona. I agree that organization with representation to see that duty is again placed on foreign honey is the only thing that can save us financially. But what shall we do with honey already on hand?

There are plenty of beekeepers who are not salesmen, and they must either sell below cost or drum up home trade.

I have lately disposed of about 10 tons of honey, with 21 tons left on hand. I took trips to widen my sales, and visited the towns and mining camps of northern Arizona, climbing with my load up the mountains and reaching Prescott, a beautiful city, framed like a picture with mountains clad in green pines. This is a dear spot for me, for there I buried my wife nine years ago.

After drumming the city and selling my load, I started on my return home, where my 13-year old son and a housekeeper were left to care for 1500 colonies of bees and a farm. I left the city late in the afternoon. When night overtook me on the top of a pine-clad mountain, I tied my horse securely, fed him and wrapped myself in my blanket. I was fast asleep when a fierce snort from my horse awoke me. Luckily I had that day picked up a match in the street of Prescott. It was the only weapon I had. I struck it and set fire to hay and brush near me and scared away a mountain lion.

My horse is mountain raised, and had probably seen some of his mates attacked by these beasts. A neighbor has since told me that a few days before he had roped a two-year old steer which was killed shortly after by a lion in broad daylight.

The bees in our valley have done well from the first crop of alfalfa, but had very little from the second crop.

Buckeye, Ariz. B. A. HADSELL.

Late Season—Turned Out Good

After a most unpropitious season, and one which looked like being an absolute failure again, we were suddenly awakened to the fact that the bees were gathering nectar at a tremendous rate, which lasted for over three weeks, and at the end of that time our apiary looked like a miniature city of sky-scrapers, and from 36 colonies, spring count, or rather 14 colonies and 22 nuclei, for that is what spring dwindling had really left me, I harvested between 2800 and 3000 pounds of extracted honey, some colonies storing 120 to 140 pounds, this with an increase to 52 colonies, mostly by natural swarms. Clover was a month later than usual, and the same might be said of thistle and other sources of nectar. B. BREWSTER.

Greenridge, Manitoba, Nov. 4.

Missouri Meeting.—In our last issue the date of the Missouri meeting was given as Dec. 3 and 4 instead of January. President Rouse writes us that it has been decided to hold the meeting at Columbia during Farmers' Week, in order to secure a larger attendance.

◆

Indiana Beekeepers to Meet.—The Indiana State Beekeepers' Association will meet at the State House, Indianapolis on Dec. 10 and 11. Dr. Phillips and E. R. Root and others have promised to attend. The program will contain some most excellent numbers. Among other good things the postmaster of Indianapolis will give full directions and instructions how to build up and conduct a parcels post sales campaign. This number alone is worth coming to hear.

GEO. W. WILLIAMS, *Sec.*

Redkey, Ind., Nov. 18.

◆

Illinois Convention.—The 25th annual meeting of the Illinois State Beekeepers' Association will be held in the Council Chamber of the City Hall at Springfield, on Monday and Tuesday, Nov. 29 and 30, 1915.

The meeting called to order by Pres. E. J. Baxter, of Nauvoo, at 10 o'clock a.m.

Invocation—Rev. Geo. F. Gunter, Pastor 2d Presbyterian Church.

Welcome Address—Mr. Wm. H. Conkling, Secretary of the Springfield Commercial Association.

Response and President's Address—Pres Baxter.

Order of business taken up'

FIRST DAY—AFTERNOON SESSION.

Address—"Outdoor Wintering," Dr. E. F Phillips, Bureau of Entomology, Washington, D. C.

Report of A. L. Kildow, State Foulbrood Inspector, of Putnam.

Papers by Mrs. A. L. Kildow, of Putnam, and Mr. C. F. Bender, of Newman.

SECOND DAY—FORENOON SESSION.

'Bees and the part they play in the cross-fertilization of our fruits and field crops"—C. P. Dadant, former president, Hamilton.

E. R. Root, Editor of Gleanings in Bee Culture, of Medina, Ohio. Subject of his own choosing.

QUESTION BOX ALWAYS OPEN.

Election of officers and photograph for the report.

SECOND DAY—AFTERNOON SESSION.

N. E. France, of Platteville, Wis., is expected at this hour; the subject we do not know, though we do know his ability.

Prize essays, $5.00, $4.00, $3.00, $2.00, $1.00.

The Secretary wishes to say, with the ability we have represented in this program, and the subjects they will handle, it will be of interest not only to beekeepers but to everybody, and so everybody is invited.

Discussions and *sine die* adjournment.

Headquarters at the St. Nicholas Hotel—Rooms, European, $1.00 and $1.50; American, $2.50 and $3.00. Annex (to St. Nicholas), American, $3.00 and $3.50; European, $1.50 and $2.00.

Those desiring cheaper hotel can find it. JAMES A. STONE, *Sec.*

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Classified Department

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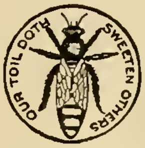
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